



Comprehensive Postpartum Project

Maternal Health and Family Planning Clinical Training Curriculum

Hashemite Kingdom of Jordan
Ministry of Health

February 2000

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Message From The Minister Of Health

Family Planning is, making a decision on the number of children and size of the family, which enables parents to raise their children in a better and healthier way. This means that a family has to decide on using birth spacing methods. The Ministry of Health has put a great effort since 1980s to spread awareness through various media means and training courses for doctors, nurses and other service providers in all the hospital and mother and child health care centers throughout the Kingdom.

This curriculum is important since it will help the service providers, who work in the family planning field, to improve their practical skills.

This curriculum was developed by the collaborative efforts of the Jordanian Ministry of Health, USAID/Jordan and a technical committee comprised of experts from the various sectors and institutes in the health field, including Jordan University, Royal Medical Services, Ministry of Health and private sectors.

I would like to take this opportunity to thank the technical committee for developing this curriculum and I hope that it will be a scientific, theoretic and applicable reference to all.

Dr. Aref Batayneh

Minister of Health
January 1997

INTRODUCTION

About 50 percent of Jordanian women of reproductive age wish either to have no more children or delay having their next child at least two years. Despite almost universal knowledge of contraceptives, many of these women are not using a contraceptive method. Most of these women want to limit childbearing and therefore need effective long-term family planning methods. Furthermore, infant mortality rate is reduced to half for infants born following an interval of 2-3 years (JPFHS, 1990). Therefore, increasing birth interval to at least 2-3 years is an important intervention to protect the health of mothers and children. Furthermore, although breastfeeding is almost universal in Jordan supplemental feeding is started early, such that the women and infants from unplanned high pregnancy, effective contraception should begin early in the postpartum period to provide adequate overlap with lactational amenorrhea.

The Comprehensive Postpartum (CPP) Project is designed to institutionalize the provision and use of family planning services as a routine part of maternity care. A primary rationale for this institutionalization is that reducing unwanted pregnancies and eliminating short birth intervals will reduce infant mortality and improve the health of mothers. The CPP clinics are established to meet the expressed need for safe and effective contraception, and also improve maternal and infant health, by introducing, implementing and evaluating a model of Comprehensive Postpartum care in Jordan, uniting birth spacing and maternal and infant health care for the postpartum period.

Eight percent of pregnant Jordanian women obtain at least some antenatal care, and virtually all new mothers obtain considerable infant care. The CPP clinics provide birth-spacing information and services to these women when they obtain antenatal and intrapartum services. In addition, because Jordanian women were likely to neglect their own postpartum health, the CPP clinics are designed to increase awareness among pregnant women and new mothers of the importance of postpartum health and family planning, and to provide convenient services.

In Jordan, maternal and infant health services are provided through maternal and child health (MCH) centers, NGO clinics, private physicians, and hospital outpatient clinics. Services are provided in isolation, there is little or no coordination among the antenatal, intrapartum, postpartum, and birth-spacing service units, even in the same hospitals. The CPP Project establishes a model of coordinated comprehensive and standardized health services for women and infants. The goal of this system is three-fold: to enhance the health of women and their infants by providing standardized services, increase the use of birth-spacing services, and establish a referral system between various sources of maternal and infant care.

A C R O N Y M S

BPM	Beats Per Minute
CNS	Central Nervous System
COC	Combined Oral Contraceptives
CPD	Cephalo Pelvic Disproportion
CPP	Comprehensive Post Partum
C/S	Caesarean Section
EDD	Estimated Date of Delivery
FHR	Fetal Heart Rate
GTI	Genital Tract Infections
HB	Hemoglobin, Hematocrit
HIV	Human Immunodeficiency Virus
IUD	Intra Uterine Device
I.V.	Intravenous
LAM	Lactational Amenorrhea Method
LMP	Last Menstrual Period
LOA	Left Occiput Anterior
MCH	Maternal Child Health
NG / Tube	Naso Gastric
NGO	Non Government Organization
NVD	Normal Vaginal Delivery
PID	Pelvic Inflammatory Disease
PP	Post Partum
ROM	Premature Rupture of Membranes
Repeat C/S	Repeat Caesarean Section
RMS	Royal Medical Services
R/O	Rule Out
ROA	Right Occiput Anterior
ROM	Rupture Of Membranes
ROP	Right Occiput Posterior
STD	Sexually Transmitted Diseases
UTI	Urinary Tract Infection
FHS	Fetal Heart Sound

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ANTENATAL

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STAFFING OF CPP CENTERS

I. Manager

II. Physicians

- Obstetrician Gynaecologist.
- Family Physician.
- Pediatrician (according to CPP Job Description).

III. Nurses

- Midwife
- Staff Nurse
- Practical Nurses

IV. Counselors

- Lactation specialist : Will instruct the mother about breastfeeding and care of the breasts and nipples.
- Dietitian : Instruct patients about healthy diets, hydration, etc.
- Genetic : In case an abnormality is detected in the fetus, suggest methods of follow-up and management.
- Birth Spacing : Discuss the various methods available for breastfeeding as well as non-breastfeeding women.

V. Receptionist

VI. Maids as needed

ANTENATAL CARE

This is a very important period. Besides caring for the mother and her health, attention will also be taken care of through counseling about birth spacing, diet and the importance of the CPP Centers. The period extends from the diagnosis of pregnancy till onset of labor.

O B J E C T I V E S

I. CARE OF THE MOTHER

- a- Classify pregnant women into high risk, low risk.
- b- Management of minor ailments of pregnancy.
- c- Detection and management of medical illnesses.
- d- Detection and management of complications of pregnancy.
- e- Facilitate referral to other needed specialities (i.e. combined clinic)
- f- Teenage pregnancy.

II. CARE OF THE FETUS

- a- Growth and development.
- b- Congenital anomalies.

III. COUNSELING

- a- Lactation.
- b-
- c- Genetics.
- d-

ANTENATEL CARE

VISITS

The frequency of visits is determined by the individual needs of a woman and an assessment of her risks, especially for high risk patients

From diagnosis to 28 Weeks	Every 4 Weeks
28 to 36 Weeks	Every 2-Weeks
36 and over	Weekly

From the first visit, while in the waiting area, the pregnant woman and her family will be shown videos about lactation, diet, hygiene and birth spacing. They will also be given information about the CPP Centers, their importance for the welfare of the mother and her child. Also the importance of the CPP Centers concerning the follow-up of their newborn: exams, immunizations, growth and development, etc.

The Antenatal information and findings (to be standardized, a copy is enclosed for references) are noted in the mothers antenatal chart. They must be as complete as possible with additional information added when it becomes available.

ANTENATAL CARE

FIRST VISITS

A complete history and physical examination are performed after the diagnosis of pregnancy.

Pregnancy Tests

Common urine pregnancy tests used today are very sensitive and may be positive up to one week after implantation or within days of the first missed menstrual period. The first voided morning urine is the most concentrated specimen for analysis. Radioimmunoassay for serum testing of the beta subunits of human chorionic gonadotropin (B-HCG) may be accurate up to a few days after implantation (or even before the first missed period). Human chorionic gonadotropin production is maximum at 60 to 70 days of gestation and, thereafter, declines. These tests do differentiate between trophoblastic disease (e.g., molar pregnancy or choriocarcinoma), normal pregnancy and ectopic pregnancy.

A. COMPLETE HISTORY

A complete history aids in the assessment of the risk status.

1. Gynecological History Including Menstrual and Contraceptive History

Previous gynecologic infections or problems should be recorded. A known regular menstrual history is the most reliable predictor of delivery date. It should be remembered that the women with recent birth control pill usage may have postpill amenorrhea, and, therefore, pregnancy dating may be in error.

Any intrauterine device use should be noted and its presence, absence, or removal carefully documented.

2. **Obstetric History**

The obstetric history is recorded as gravidity and parity.

Gravidity is the total number of pregnancies.

Parity is expressed as the number of term and premature deliveries **Plus** abortions.

Details of previous pregnancies, such as character and length of labor, type of delivery, complications, infant status, and birth weight should be noted. Recurrent first trimester losses or history of second trimester losses may suggest genetic problems or incompetent cervix.

If the patient has had a previous Caesarean section, recommendations about vaginal delivery after Caesarean could be addressed at this time.

3. **Medical and Surgical History, Prior Hospitalizations.**

4. **Environmental Exposures, Medications** taken in early pregnancy, drug reactions, allergic history and X-ray exposures.

5. **Family History** of medical illnesses, hereditary illness, multiple gestation.

6. **Social Factors.** Home situation, family and social support. Use of legal substances such as cigarettes and alcohol, as well as illicit chemical use, is permitted in some social and racial groups. All of these chemicals have serious ramifications for fetal development and pregnancy outcome.

7. **Review of System**, conventional and specific, as related to pregnancy, nausea, vomiting, abdominal pain, constipation, headaches, syncope, vaginal bleeding or discharge, dysuria or urinary frequency, swelling, varicosities, hemorrhoids.

B. **PHYSICAL EXAMINATION**

1. **Complete Physical Examination** with attention directed to specific organ systems as a positive history is elicited. This should include height, weight, thyroid and breast, lymph nodes, lungs, heart, abdomen with fundal height and presence of fetal heart tones, extremities, and a basic neurologic screening. The examiner must be aware of the

normal changes found in pregnancy, as well as the pathological changes that may develop during pregnancy.

2. Pelvic Examination (as indicated)

- a. **External Genitalia** obstetric
injury should be noted.
- b. **Vagina**
cervical secretions are increased, thus raising the vaginal pH, which may cause a change in the flora of the vagina. No treatment is necessary unless diagnosis of a specific infection is made.
- c. **Cervix** is evaluated with a Papanicolaou (Pap) smear.
 - (1) Cervical eversion is normal
 - (2) Softening of the cervix is normal and Nabothian cysts are of no consequence. Effacement or dilatation of the internal os is abnormal, except near term, and may indicate premature delivery, which should be evaluated accordingly.
- d. **Uterus** estimation of gestational age by uterine size is one of the most important elements of the first examination. A normal nonpregnant uterus is firm, smooth and approximately 3 X 4 X 7 cm. The uterus will not change noticeably in consistency or size until five to six weeks after LMP, or four weeks from conception in volume from LMP. At 12 weeks, the uterus fills the pelvic cavity so that the fundus of the uterus is palpable at the symphysis pubis.

Uterine estimation Abdominally after 12 weeks;

By 16 weeks, the uterus is midway between the symphysis pubis and the umbilicus. At 20 weeks, it reaches the umbilicus. Thereafter, there is a rough correlation between weeks of gestation and centimeters of fundal curvature when measured from the top of the symphysis pubis to the top of the uterine fundus.

After correcting for minor discrepancies resulting from adiposity and variation in body shape, a uterine size that exceeds the anticipated gestation by three or more

weeks as calculated from the last normal menstrual period suggest multiple gestation, molar pregnancy, leiomyomata polyhydramnios, uterine anomalies, adnexal masses, or simply an inaccurate date for the LMP. Ultrasonography is the best diagnostic tool for this situation. The finding that uterine size is less than expected may indicate inaccurate dating or intrauterine growth failure.

- e. **Adnexa** are difficult to evaluate because the fallopian tubes and the ovaries are lifted out of the pelvis by the enlarging uterus. Any questionable masses should be confirmed by ultrasound etc.

C. **ESTIMATED DATE OF CONFINEMENT (EDC) OR EXPECTED DATE OF DELIVERY (EDD)**

The mean duration of pregnancy as calculated from LMP has been found to be 280 days or 40 weeks. The estimated date of confinement (EDC) can be calculated by adding 7 days and nine months to the LMP. Deviations from this calculation may be made for various reasons (e.g., irregular or prolonged menstrual cycles or a known single sexual exposure). If the date of LMP is unknown or does not correlate with the uterine size at the first visit, ultrasonography should be used to establish the EDC.

D. **LABORATORY EVALUATION**

A positive history for certain illness or abnormalities in other screening tests should be investigated with further tests as indicated.

- Complete blood count, ABO blood typing and RH factor, antibody screening, urinalysis, serologic test for syphilis, rubella titer, Pap smear, Hepatitis B surface antigen screening.
- Specialized screening tests
 - a. A screen for the **human immunodeficiency virus** should be offered to all women and strongly

- b. **Hemoglobin electrophoresis** is indicated in some groups: sickle hemoglobin in those of black ancestry, **b** - thalassemia in mediterranean couples, and **a** - thalassemia in Asian couples.
- c. **Herpes cultures** are valuable in confirming diagnosis when active lesions are present; however, they have little value in predicting the fetus at risk. Therefore, screening cultures are not recommended.
- d. **Urine or blood toxicology screens** may be indicated for the evaluation of illicit chemical use.

E. PATIENT EDUCATION (FIRST AND SUBSEQUENT VISIT)

- Suggestions include eating foods from each of the major food groups, consuming liquids (especially water), adding fiber, and ensuring adequate calcium intake. For woman whose weight is normal before pregnancy, a normal weight gain is 10 - 12 kg.

This is usually achieved by a well-balanced diet containing 60 - 80 gm of protein, 2400 or more calories, low sugar and fats, high fiber, and other dairy products and higher weight gain is often required. Excessive weight gain or preexisting maternal obesity (more than 90 kg) may, in some cases, be associated with increased risk of fetal macrosomia. This is significant risk factor for the infant in terms of birth trauma and delivery by Caesarean section.

Prescription of prenatal vitamins is probably not necessary. Practically all diets that supply adequate caloric intake for appropriate weight gain will also provide enough minerals. There are two exceptions: **Folic Acid Supplementation** preconceptionally and throughout the early part of pregnancy has been shown to decrease the incidence of fetal neural tube defects. Also increased iron requirements in the latter part of pregnancy are difficult to meet in the routine diet. **Iron Supplementation** after 12 weeks should be recommended.

- **Working during pregnancy.** Most women can safely work until term without complications. A flexible approach must be taken. Pregnant women may have less tolerance to heat, humidity, environmental pollutants, prolonged standing, and heavy lifting. Pregnant women who should probably not work include those with history of two premature deliveries, incompetent cervix, fetal loss, secondary to uterine abnormalities, cardiac disease greater than class II, hemoglobinopathies, diabetes with retinopathy or renal the membranes, or multiple gestation after 28 weeks.
- **Exercise.** Women should be encouraged to exercise if they have no complicating factors. Recommendations should be tailored by differentiating between a trained athlete and a sedentary woman. The trained athlete can continue rigorous training during pregnancy but should avoid raising the core temperature or becoming dehydrated. Exercise should be varied during the third trimester to avoid too much stress on knee and ankle joints. Walking can be adapted to the needs of most women.
- **Smoking** should be discontinued during pregnancy. It is important to counsel patients about this and record their compliance. The potentially harmful effects of cigarette smoking during pregnancy include low birth weight, premature labor, miscarriage, stillbirth, (cot) death, birth defects, and increased respiratory problems in neonates. More than 10 cigarettes a day can have a pronounced effect on birth weight. Many women do not realize the severity of the risk. Patient education is important, with counseling or referral to appropriate community groups.
- **Alcohol** use should be discontinued in pregnancy. Chronic alcoholism has been shown to cause fetal maldevelopment commonly referred to as fetal alcohol syndrome. It may also be true that a linear relationship exists between alcohol consumption and fetal damage. Therefore, even social drinking can be damaging.

- **Sexual relations.** There are no restrictions for patient without complications. Whatever is comfortable and pleasurable may be continued unless and until a pregnancy complication occurs (e.g., undiagnosed bleeding, preterm labor, known placenta previa, rupture of the membranes).
- **Fetal movements.** Fetal activity is usually of cyclic frequency and may vary throughout pregnancy. Lack of fetal movement or a marked decrease in frequency may be a warning signal of fetal distress.
- **Warning signs of preterm labor.** Studies have suggested improved rates of early diagnosis and treatment of preterm labor with education of the patient.
 - a. than 30 seconds and occurs more than four times per hour.
 - b. Contractions or intermittent pains or sensations between nipples and knees lasting more than 30 seconds and recurring four or more times per hour.
 - c.
 - d. Change in vaginal discharge, including bleeding.
 - e. Indigestion or diarrhea.
- **Common complaints.** Many discomforts are expected in pregnancy and these are related to cardiovascular changes, hormonal effects, uterine growth, and the change in body posture. After investigation to rule out a serious pathologic condition, treatment may be directed to symptomatic relief.
 - a. **Headache and backache.** Paracetamol (Panadol, Revanin): 300 mg every 3 to 4 hours, should be sufficient. For severe headache or migraine, codeine or other related narcotic may be used. Aspirin should be avoided.

- b. **Nausea and vomiting.** First sickness may be relieved by eating frequent, small meals, getting out of bed slowly after eating a few crackers, and avoiding spicy or greasy foods. If symptoms are severe and persistent, hospitalization and intravenous fluids may be needed. In patients who require antiemetics, there is no known association of birth defects with use of Meclozine promethazine (Phenergan), diphenhydramine (Benadryl), and several other antihistamines.
 - c. **Constipation.** and regular exercise is recommended. Stool softeners such as psyllium hydrophilic mucilloid (Metamucil), Lactulose (Duphalac) may help. Mild laxatives should be used sparingly and only if the prior measures fail.
 - d. **Varicosities.** Support stockings and leg elevation are recommended.
- **Other important information** to be provided along the course of pregnancy include: breastfeeding, genetic screening, birth spacing and the importance of postpartum visits for growth and development of the baby, immunizations, feeding, etc.
- **A pregnant woman** must report any of the following conditions as soon as they occur:
 - a. Bleeding.
 - b. Sudden gush of fluid
 - c. Severe headache not relieved by Paracetamol
 - d. Dizziness and blurring of vision
 - e. Sustained vomiting
 - f. Swelling (hands, face, etc.)
 - g. Loss of fetal movements.

ANTENATEL CARE

S U B S E Q U E N T V I S I T S

A. FREQUENCY AND EVALUATION

Regular periodic visits allow ongoing evaluation of the fetal-maternal unit and reassurance of normal progress of the

frequency of prenatal visits is monthly up to 28 weeks, every 2 to 3 weeks up to 36 weeks, and then weekly until delivery. Standard assessment at each prenatal visit includes maternal weight, blood pressure, uterine size, auscultation of fetal heart tones and evaluation for edema, proteinuria, and glucosuria. After 18 to 20 weeks, the patient should be questioned about fetal movements. Late in pregnancy, the presenting fetal part should be determined. Ongoing patient education appropriate to the gestational age of the fetus is incorporated into these visits. All information is recorded on a standardized form.

B. OTHER SCREENING TESTS

- **Triple screen** (see attachment) for birth defects to be completed between 15 and 20 weeks of gestation. Abnormal results are further evaluated by genetic counseling and ultrasound.
- **Morphology ultrasound** for anatomical defects to be completed between 17 and 20 weeks of gestation. Abnormal results are further evaluated by genetic counseling. Sex of the baby could be determined if the parents desire it.

- At 24 to 28 weeks, a **one - hour glucose test** (blood glucose measurement one-hour after a 50 gm oral glucose load) is obtained to check for gestational diabetes in all pregnant patients. Those with particular risk, (e.g., previous gestational diabetes or fetal macrosomia) may warrant earlier testing. Values greater than or equal to 140mg/ d1 (8 oral glucose tolerance test.
- Repeat **hemoglobin and hematocrit** are obtained at 26 to 30 weeks.
- At 28 to 30 negative women and an RH (D) immune globulin (RhoGAM) is administered.

c. **RISK ASSESSMENT**

High Risk pregnancy is defined as pregnancy associated with increased (Maternal and/or fetal) morbidity and/or mortality. Information gathered must be evaluated to assess the risk for the outcome of the developing pregnancy. Designation of a pregnancy as high risk implies a need for special care or appropriate referrals. There are major categories for increased risk that should be identified antepartum and given appropriate consideration in subsequent pregnancy management. These include:

- (A) Preexisting medical illness
- (B) Previous pregnancy complications, such as perinatal mortality, prematurity, fetal growth retardation, malformations, placental accidents, and maternal hemorrhage, and
- (C) Evidence of poor maternal nutrition. Also, the health care team must be able to recognize the appearance of complicating events that may transform a low-risk pregnancy into a high-risk pregnancy. Please refer to the

HIGH RISK EVALUATION FORM

Reproductive History Score

Age		
	<16 years -----	1
	15 - 35 years -----	0
	>35 years -----	2
Parity		
	0 -----	1
	1-4 -----	0
	>5 -----	2
	Abortion (two or more) or history of infertility -----	1
	Postpartum bleeding or manual removal of Placenta -----	1
	Pregnancy Induced Hypertension -----	1
	Pr -----	2
	Abnormal or difficult labor -----	2
	Weight of newborn: >4000gms or < 2500gms -----	1

Medical or surgical conditions

Previous Gynecological surgery -----	1
Chronic renal disease -----	1
Gestational diabetes -----	1
Non-gestational diabetes -----	3
Cardiac disease -----	3
Other medical disorders (depending on severity) -----	1-3

Present pregnancy

Bleeding	< 20 weeks -----	1
	> 20 weeks -----	3
	Anemia < 10 gm-Hb -----	1
Post maturity	> 42 weeks -----	1
Hypertension	> 140/90 mmHg -----	2
Premature rupture of membranes -----		2
Hydramnios -----		2
IUGR -----		3
Multiple pregnancy -----		3
Malpresentation -----		3
Rh isoimmunization -----		3

Total Score

Low risk -----	0-2
High risk -----	3-6
Very high risk -----	7 or more

ANTENATEL CARE

ADDITIONAL COUNSELING

A. GENETIC COUNSELING

Congenital disease is a major cause of infant morbidity and mortality. Indications for genetic referral include (1) maternal age greater than 35 years at the time of the birth; (2) family history of congenital anomalies or inherited disorders; (3) abnormal development or mental retardation of previous child; (4) ethnic background associated with inheritable diseases; (5) chemical use or exposure to teratogens.

Other patients to be referred are those with an abnormal triple screen or an anomaly detected on the morphology ultrasound.

A GENETIC DIAGNOSTIC UNIT NEEDS TO BE ESTABLISHED IN ONE OF THE MAJOR CPP CENTERS THAT WILL PROVIDE GENETIC SERVICES. ALL THE PATIENTS REFERRED WILL BE SEEN IN THAT CENTER FOR ADVICE AND TREATMENT.

B. LACTATION COUNSELING

At 28 weeks, after all the tests have been performed and the patient has been exposed to videos and pamphlets about breastfeeding, she will be counseled about the advantages and behaviors of breastfeeding. She will also be instructed about care of the breasts. This is to be repeated at around the 36th week of gestation.

Breastfeeding is vital for child survival, maternal health, and birth spacing.

BREASTFEEDING

- ★ Saves lives;
- ★ Is perfect nutrition for infants and children;
- ★ Substantially contributes to increasing birth intervals throughout the world;
- ★ Reduces the mother's risk of ovarian, endometrial, and premenopausal breast cancers, and osteoporosis, and
- ★ May be used as an introductory family planning method, the Lactational Amenorrhea Method (LAM).

RECOMMENDATIONS ABOUT BREASTFEEDING

1. Allow newborn to breastfeed as soon as possible after birth, and to remain with the mother for at least several hours following delivery.
2. Breastfeed frequently, whenever the infant is hungry, both day and night.
3. Breastfeed exclusively for the first six months.
4. After the first six months, when supplemental foods are introduced, breastfeeding should precede each supplemental feeding.
5. Continue to breastfeed for up to two years and beyond.
6. Continue breastfeeding even if the mother or the baby becomes ill.
7. Avoid using bottles, pacifiers (dummies), or other artificial nipples.
8. Mothers should eat and drink sufficient quantities to satisfy their hunger and thirst.

C. PHYSIOLOGY OF LABOR

During the second half of pregnancy, the pregnant woman should attain the information , education with the help of videos, discussions, lectures and pamphlets about the normal physiology of labor, stages, preparation, anatomy of birth canal, signs of labor progression , breathing and nature of pain in order to :

- Reduce the need for analgesia and anesthesia
- Ensure cooperation of parturient with the attending staff
- Minimize fetal distress
- Reduction of some maternal complications (exhaustion)
- Minimize instrumental and operative interference
- Ensure smooth and shorter progression of labor

D. BIRTH SPACING COUNSELING

By the 28th week of gestation, the pregnant women would have been exposed to IEC materials, e.g., videos, discussions, pamphlets about birth pacing. Counseling should start then and continue after delivery while the mother is breastfeeding.

Birth spacing is vital for maternal health and child survival.

Birth spacing of at least two years

- ✱ Saves lives;
- ✱ Reduces mortality and morbidity of the mother and infant;
- ✱ Gives the mother time to renew nutrient stores.

Counselors will provide comprehensive counseling and mothers will have the option of including their husbands or other relatives in the counseling. The counselor will ask questions to assess the

encourage questions. If a mother is interested in obtaining a birth spacing method, the counselor will provide her with the necessary information, and help her choose a postpartum method. The importance of the CPP Centers is stressed again.

The Lactational Amenorrhea Method (LAM) is a highly effective introductory family planning method for breastfeeding women. It provides natural protection against pregnancy for up to six months after birth, and encourages the timely introduction of complementary methods during breastfeeding.

One standard for establishing service delivery guidelines will be to ensure an appropriate method mix. LAM is a suitable method for the postpartum period; in Jordan, it is especially important due to high breastfeeding rates. IUD's are an important method in Jordan, particularly since this is a highly effective long-term method. Continuation rates, however, are low for IUD's. The counselor will emphasize the management of side effects to ensure that women better understand normal IUD bleeding patterns, and that providers have the necessary skills to manage side effects.

The counselor will also focus on the injectable contraceptives in Jordan. Progestin-only injectables are a suitable method for breastfeeding women in the postpartum period. Counseling and active provider management of bleeding side effects is important service components for the successful use of injectables.

OPTIONS FOR BREASTFEEDING WOMEN

First choice: LAM, Barrier Methods, IUD, Tubal ligation, or
Vasectomy

Second choice: Progestin-only contraceptives

OPTIONS FOR NON-BREASTFEEDING WOMEN

Barrier methods, IUD, progestin-only contraceptives (an injection of Depo Provera may be given upon discharge after delivery), COC (to be started 3 weeks after delivery), tubal ligation or vasectomy.

ANTENATEL CARE

TEENAGE PREGNANCY

Although teenage (18 years and under) pregnant mothers experience a higher level of pregnancy complications than older women and are more likely to have a low birth weight baby, these poor outcomes are multifactorial like physiological, psychological immaturity in addition to not receiving prenatal care early in pregnancy. Controversy exist as to whether increased incidence of preeclampsia is age related or secondary to lack of prenatal care, poor nutrition or other factors. Anemia is probably dietary. Prenatal care decreases the incidence of preeclampsia, anemia, postpartum hemorrhage, infection, and Caesarean section. The nutritional requirements in adolescents are higher than adults. It is apparent that the older the patient, the earlier she will seek antenatal care, especially the primigravida. It is unlikely that CPD is common. Young maternal age is associated with lowbirth weight and with higher postnatal complications such as more sudden infant death, more injuries and more illness.

ACOG EDUCATIONAL BULLETIN

Number 228, September 1996

Maternal Serum Screening

Maternal serum screening is a noninvasive method of obtaining information about fetal development that can be used early in pregnancy. Maternal serum alpha-fetoprotein (MSAFP) was first used as a marker to identify patients at risk for having an infant with a fetal neural tube defect (NTD). Multiple serum markers have since been proved useful in identifying patients at risk for other fetal structural malformations and chromosomal anomalies.

The goal of a screening test is to identify from a large population a smaller group of patients that have an increased risk of a disorder and to offer that smaller group a more specific diagnostic examination. Screening should be voluntary, and the patient should be counseled about its limitations and benefits. A negative, or normal result of screening does not ensure that a child will not have a birth defect (including an NTD or fetal chromosomal anomaly). Conversely, a positive result is not a diagnosis of an abnormality but rather indicates that a patient has a level of risk sufficient to warrant further evaluation, such as ultrasonography or amniocentesis.

Laboratory proficiency is paramount in ensuring that screening programs provide results for clinical interpretation of maternal serum markers. Proficiency testing, such as that supplied by the College of American Pathologists, is required for certified laboratories. Typically, alpha-fetoprotein (AFP) test results are reported as multiples of the median (MoM), a statistical convention introduced as a method by which different laboratories could compare their results (1). A laboratory should be able to verify medians and update them on a regular basis. It should track the MoM periodically and adjust medians accordingly. The appropriate controls should be run with each analyte for every assay, and data on the precision of each assay should be available.

When a patient's screen result is positive, the patient should be contacted without delay. The individual contacting the patient should be knowledgeable and be able to answer questions regarding the results of the test. It should be emphasized that a positive result does not mean that the fetus is affected with a disorder, but that further counseling and testing is available for the patient. Prenatal identification of fetal abnormalities enables families to make informed reproductive choices and allows the obstetrician to determine the most appropriate strategies for delivery and neonatal care. Alpha-fetoprotein, human chorionic gonadotropin (hCG), and unconjugated estriol (uE₃) are the markers currently used in maternal serum screening programs.

This Educational Bulletin was developed under the direction of the Committee on Educational Bulletins of the American College of Obstetricians and Gynecologists as an aid to obstetricians and gynecologists. The College wishes to thank Nancy C. Rose, MD, and Michael T. Mennuti, MD, for their assistance in the development of this bulletin. This document is not to be construed as establishing a standard of practice or dictating an exclusive course of treatment. Rather, it is intended as an educational tool that presents current information on obstetric-gynecologic issues.



Replaces Number 154, April 1991

Alpha-Fetoprotein

Alpha-fetoprotein is produced by the fetus, making it an ideal marker of fetal development. Structurally and functionally, AFP is related to albumin. Genes that encode both proteins originate on chromosome 4, and each has a molecular weight of 69,000. Several functions have been postulated for AFP. Similar to albumin, it may be an intravascular transport protein or may play a role in maintaining oncotic pressure. An immunosuppressive role has also been suggested as a mechanism by which maternally derived fetal antigens are protected from triggering the development of maternal antibodies. Because there are reported cases of congenital AFP deficiency resulting in normal newborns (2), a critical role in fetal development is still speculative.

Fetal AFP is produced sequentially by the fetal yolk sac, the gastrointestinal tract, and the liver. It reaches a peak concentration in fetal serum at the end of the first trimester. Although the fetal liver continues to produce the same high levels of AFP, fetal serum levels decline in the second trimester as a result of the expanding fetal intravascular compartment. There is an abrupt decrease in AFP production at 30 weeks of gestation.

Filtration of blood through the fetal kidney results in high concentrations of AFP in the amniotic fluid. As the fetus swallows amniotic fluid, AFP is destroyed by gastrointestinal proteolytic enzymes. The decrease in amniotic fluid AFP during the second and third trimesters parallels that of fetal blood levels of AFP. The mechanism of transfer of AFP to the maternal circulation is both transplacental (two thirds) and transamniotic (one third) (3). In the maternal circulation, AFP levels gradually increase until 30 weeks of gestation and then decline until delivery. Therefore, during the second trimester, MSAFP levels continue to increase, while fetal levels decline (Fig. 1). Both high and low MSAFP levels may be predictive of a serious birth defect or adverse pregnancy outcome.

Neural Tube Defects

Neural tube defects are the second most frequent serious fetal malformation in the United States, surpassed only by congenital heart defects. They are a heterogeneous group of disorders that result from failure of the neural tube to close normally between the third and fourth week of embryologic development.

Evidence for multisite closure of the spinal cord has been demonstrated (4) and is reflected in humans by the relationship between the timing of specific teratogen exposure and sites of spinal cord disruption. During development, the cranial end of the neural tube becomes the forebrain, midbrain, and hindbrain; a failure of closure here

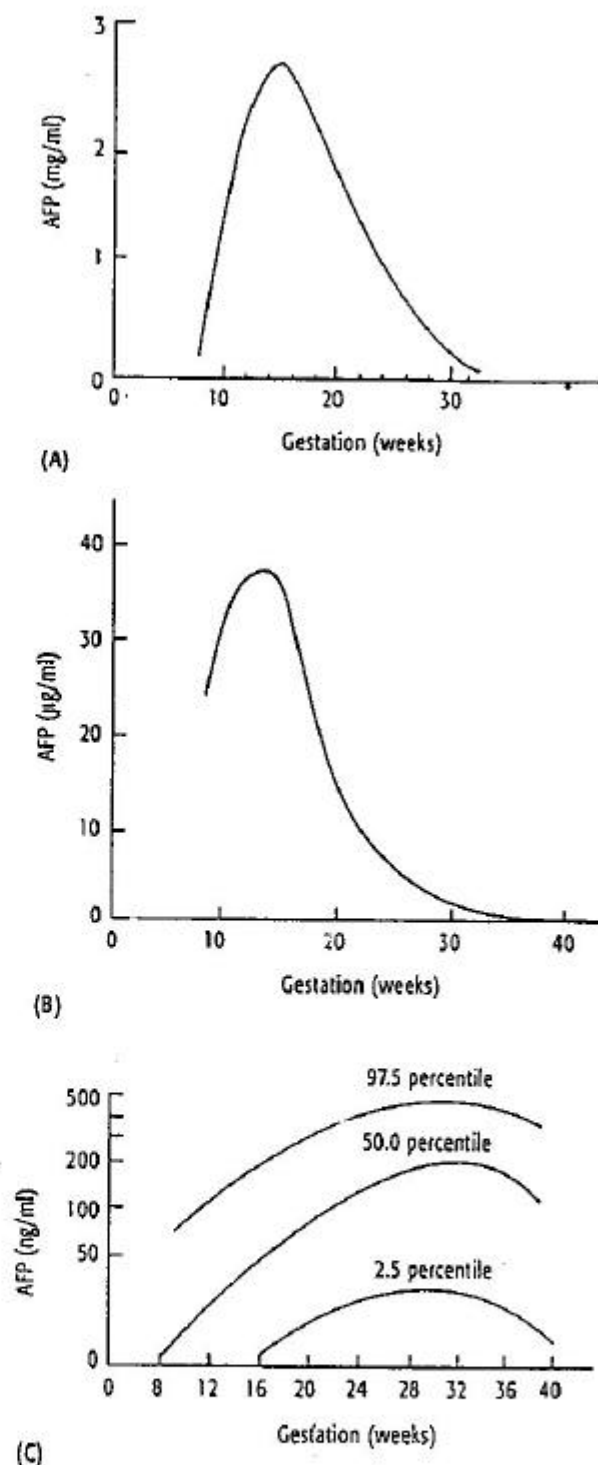


Figure 1. Approximate relationship between alpha-fetoprotein (AFP) values in fetal serum (A), amniotic fluid (B), and maternal serum (C). Note varying laboratory units for each graph. (Habib ZA. Maternal serum alpha-fetoprotein; its value in antenatal diagnosis of genetic disease and obstetrical-gynaecological care. *Acta Obstet Gynecol Scand Suppl* 1977;61:14; copyright 1977, Munksgaard International Publishers Ltd., Copenhagen, Denmark)

results in anencephaly. A failure of closure distal to this region usually results in spina bifida. A third type of NTD, an encephalocele, is an extrusion of brain tissue through a skull defect, generally covered by overlying skin.

Clinical consequences of NTDs are variable. Anencephaly is incompatible with long-term survival. Among spina bifida survivors, disabilities correlate with the location and extent of the lesion as well as the presence or absence of hydrocephalus. Morbidity may include lack of specific motor function, often resulting in the inability to walk without assistance, incontinence, or developmental delay.

Incidence and Risk Factors

In the United States, the incidence of NTDs is approximately 1/1,000 births, with some temporal and geographic variation. More than 90% of NTDs occur in pregnancies in which there is no identifiable increased risk for these defects. Most NTDs (85%) are due to multifactorial inheritance—a genetic interplay between several genes and environmental factors. The most common factor that signals an increased risk for NTDs caused by multifactorial inheritance is a first- or second-degree family member with an isolated NTD.

Parents with an affected child have more than a 10-fold increased risk in a subsequent pregnancy as compared with the general population. The risk for these and other close relatives is shown in Table 1. About 12–15% of NTDs are caused by chromosomal anomalies, single gene defects, or teratogens (5). Neural tube defects have been associated with maternal diabetes mellitus as well as periconceptional ingestion of medications such as carbamazepine, valproic acid, and retinoic acid.

Folic acid has been shown to decrease the risk of development of NTDs except in diabetes. Several studies have shown that the use of folic acid decreased the rate of first occurrence of NTDs by about 50% in families not felt to have an increased risk for NTDs (6,7). Most NTDs occur in families without significant family history, and over 50% of pregnancies in the United States are unplanned (8). Thus, the U.S. Public Health Service has recommended that all reproductive-age women who are capable of becoming pregnant consume 0.4 mg of folic acid daily as a means of reducing their risk of having a pregnancy affected by an NTD. In those who have had a previous pregnancy with an isolated NTD, periconceptional folic acid supplementation of 4 mg/d, beginning at least 3 months before conception and continuing through the first trimester, has been shown to decrease the recurrence risk of NTDs by more than 70% (9). The mechanism of the effects of folic acid in the prevention of NTDs is not completely understood, and patients taking folic acid supplementation still have a residual risk for NTDs. Therefore, it is recom-

Table 1. Estimated Incidence of Neural Tube Defects Based on Specific Risk Factors in the United States

Population	Incidence/1,000 Live Births
Mother as reference	
General incidence	1.4–1.6
Women undergoing amniocentesis for advanced maternal age	1.5–3.0
Women with diabetes mellitus	20
Women on valproic acid in first trimester	10–20
Fetus as reference	
1 sibling with NTD*	15–30
2 siblings with NTD†	57
Parent with NTD	11
Half sibling with NTD	8
First cousin (mother's sister's child)	10
Other first cousins	3
Sibling with severe scoliosis secondary to multiple vertebral defects	15–30
Sibling with occult spinal dysraphism	15–30
Sibling with sacrococcygeal teratoma or hamartoma	≤15–30

*NTD indicates neural tube defect.

†Risk is higher in British studies. Risk increases further for three or more siblings or combinations of other close relatives.

Main DM, Mennuti MT. Neural tube defects: issues in prenatal diagnosis and counselling. Reprinted with permission from The American College of Obstetricians and Gynecologists (Obstetrics and Gynecology 1986, 67, 4)

mended that all patients, including those who are using folic acid supplementation, should be offered MSAFP screening or diagnostic testing based on risk factors.

Screening

Elevated levels of MSAFP have been associated with fetal NTDs. When appropriate laboratory cutoff levels are applied, MSAFP screening will detect about 85% of all open NTDs, which comprises about 80% of cases of open spina bifida and 90% of cases of anencephaly. Screening for MSAFP will not detect skin-covered defects, also known as closed defects (ie, most encephaloceles).

Because MSAFP levels increase in early gestation, individual laboratories should develop reference data with a median MSAFP level (1.0 MoM) for unaffected pregnancies for each week of gestation. Levels of MSAFP are influenced by several factors other than gestational age. These include an inverse relationship with maternal weight, a 10% higher level of MSAFP in African-American women, a decrease of about 15% in MSAFP levels in women who

have insulin-dependent diabetes mellitus, and doubling in twin gestation.

Most screening programs establish a cutoff of 2.0–2.5 times the median values (2.0–2.5 MoM) to be designated as a positive result. Most laboratories use 2.5 MoM, which produces about a 3–4% false-positive or at-risk rate. Selecting a cutoff requires striking a balance between the detection rate and the false-positive rate: the higher the screening cutoff, the lower the false-positive rate but the lower the detection rate.

Although MSAFP screening is most accurate when performed between 16 and 18 weeks of gestation, it can be performed between 15 and 22 weeks. Elevated MSAFP levels can detect defects other than NTDs such as those listed in the box. The log Gaussian distribution of MSAFP levels in unaffected pregnancies and abnormal pregnancies is shown in Fig. 2.

Diagnosis

When the patient's first MSAFP screening result is elevated, further evaluation should be undertaken. In some instances, a repeat MSAFP test may be performed when initial test results are elevated. The decision to repeat sampling in this circumstance may be based on a variety of factors such as gestational age, the level of the initial MSAFP result, and patient preference. Studies in which a repeat MSAFP screen was performed show that as many as 30% of repeat tests on moderately elevated MSAFP will be below the cutoff level, and this finding is not associated with an increased frequency of false-negative results of NTDs.

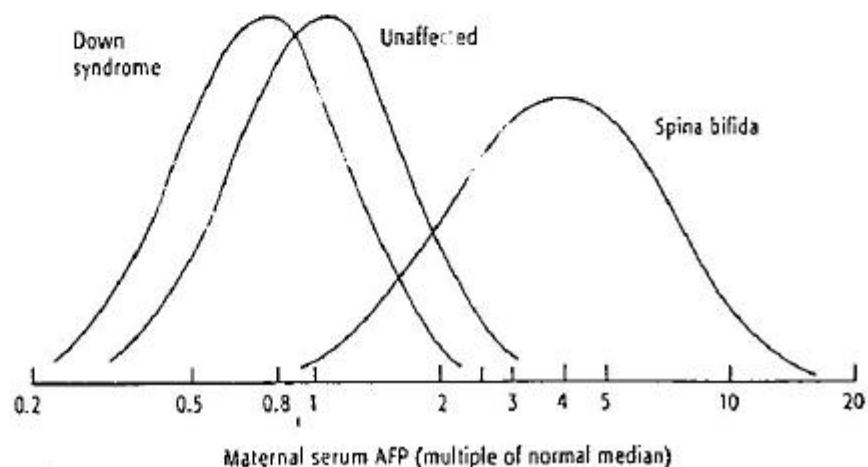
Ultrasonography

The most common reason for a false-positive MSAFP elevation is an underestimation of gestational age. Patients with one or two elevated MSAFP levels (depending on the

Other Abnormalities Identified by the Alpha-Fetoprotein Screening Process

Ventral wall defects
 Omphalocele
 Gastroschisis
 Triploidy
 Trisomies 13, 18, and 21
 Unbalanced translocations
 Amniotic band sequence
 Pentalogy of Cantrell (omphalocele, lower sternal defect, deficiency of diaphragmatic pericardium, intracardiac abnormality, anterior diaphragm defect)
 Renal agenesis
 Fetal demise
 Multiple gestation
 Congenital nephrosis (Finnish type)
 Sacrococcygeal teratoma
 Dermatologic disorders
 Epidermolysis bullosa
 Congenital ichthyosiform erythroderma
 Chorioangioma
 Risk of poor perinatal outcome
 Maternal hepatoma
 Maternal ovarian teratoma

Figure 2. Log Gaussian distribution of alpha-fetoprotein (AFP) levels in maternal serum at 16–18 weeks of gestation in singleton pregnancies for open spina bifida, unaffected pregnancies, and Down syndrome. (Wald N, Cuckle HS. Recent advances in screening for neural tube defects and Down's syndrome. *Baillieres Clin Obstet Gynaecol* 1987;1:656; copyright 1987, WB Saunders Company Limited, London)



laboratory protocol) should undergo an ultrasound examination to determine gestational age. Clinicians should be aware that the biparietal diameter (BPD) in fetuses affected with spina bifida is often smaller than in normal fetuses (10). If the original gestational dating is inaccurate (eg, greater than a 7–14-day interval in the second trimester), depending on laboratory protocol, the MoM should be recalculated in light of the new gestational age.

If the initial ultrasound examination does not provide an explanation for the MSAFP elevation (such as inaccurate gestational dating, multiple gestation, or fetal demise), a comprehensive ultrasound examination should be performed to evaluate the fetus for malformations. Several second-trimester intracranial findings are observed with increased frequency in fetuses with NTDs. These include scalloping of the frontal bones (lemon sign) (11), downward displacement of the cerebellum (banana sign), and varying degrees of ventriculomegaly. Hydrocephalus is present at term or in the newborn period in about 80% of cases of NTDs. However, this finding may not appear at the time of second-trimester ultrasonography.

- Some investigators have suggested that ultrasonography alone may be an acceptable alternative to amniocentesis for the diagnosis of an NTD (12). However, the prospective identification of NTDs may be limited by the location and extent of the lesion, fetal position, quality of the images, and experience of the ultrasonographer. The sensitivity of ultrasonography in detecting NTDs was about 90% in a large, prospective series (13). Other series (14, 15) have shown ultrasonography to have a higher degree of sensitivity in the detection of NTDs, but all these studies have been conducted in specialized centers and include patients referred for evaluation of elevated MSAFP levels (16). In such specialized centers, the patient may be counseled that the *a priori* risk of NTDs is decreased by 95%, assuming there is adequate visualization of fetal anatomy, including attention to the previously mentioned intracranial signs (14, 15). Based on such revised risk estimates, the patient may or may not choose to undergo invasive diagnostic procedures.

Amniocentesis

If further evaluation is desired, amniocentesis is performed. Many patients with an elevated MSAFP level will have normal amniotic fluid AFP levels. In contrast, an elevated amniotic fluid AFP level suggests an abnormality.

To differentiate an NTD from other types of open fetal defects, qualitative or quantitative assessment of acetylcholinesterase (AChE)—an enzyme contained in blood cells, muscle, and nerve tissue—may be performed. An elevation of both AFP and AChE levels suggests an open fetal NTD with a high degree of accuracy (>99%). An elevated amniotic fluid AFP level with a normal AChE

level suggests a fetal defect other than an NTD. An elevated MSAFP, normal amniotic fluid AFP, normal AChE, and a normal ultrasound examination exclude almost all cases of open structural malformations. This last subgroup of patients, as well as those patients with an elevated MSAFP level and a normal ultrasound examination who decline amniocentesis, are considered to be at an increased risk for low birth weight, fetal death, and oligohydramnios (17). Increased fetal surveillance during the third trimester has been suggested for these patients; however, the benefits of these evaluations have not been established by prospective trials.

Chromosome analysis should be considered if an amniocentesis is performed to determine the cause of the MSAFP elevation whether or not a structural fetal defect is identified. Ultrasound examination should detect spina bifida in approximately 90% of patients tested (13). If a structural anomaly is identified, different outcome strategies may be used depending on whether the defect is due to a chromosomal aneuploidy or to an isolated defect. For example, with omphalocele there is a 20–30% incidence of chromosomal anomalies, and NTDs may be associated with trisomy 18 or trisomy 13. Further, a structural anomaly may be caused by a duplication or deficiency of a chromosomal segment. If an NTD is detected, additional ultrasound examinations, including a fetal cardiac evaluation, should be performed to detect other accompanying malformations and to monitor the development of hydrocephalus or hydramnios.

Management

Genetic counseling should include discussions of the cause, treatment, prognosis, recurrence risk, and future prevention of defects that are detected. The options available to the family, including termination, should be explained using a nondirective approach. As appropriate, the patient can be offered the opportunity to meet with a physician who cares for children with spina bifida, including pediatric neurosurgical specialists, and parental support groups.

The benefit of cesarean delivery of fetuses with an NTD has not been evaluated by prospective studies. In a retrospective analysis, however, the neonatal outcome for infants born before the onset of labor was compared with that for infants whose mothers underwent labor before cesarean or vaginal delivery (18). Infants who were delivered by cesarean birth without labor retained greater neurologic function at an average of 3.3 spinal segments above those born after labor, regardless of the ultimate mode of delivery. Hence, although the benefits of cesarean delivery have not been proved, this route of delivery should be considered for patients carrying a fetus affected with an isolated NTD.

Chromosomal Disorders

Fetal Down Syndrome

Down syndrome is the most common pattern of human malformation, with an incidence of about 1/800 live births. Affected individuals exhibit developmental delay and a characteristic facies and are at risk for congenital heart disease, gastrointestinal anomalies, and the development of childhood leukemias. Unlike NTDs, the incidence of fetuses with Down syndrome and several other types of chromosomal aneuploidies increases with advancing maternal age.

Although initially used to detect risk of open fetal defects, maternal serum screening is now used in part to screen for fetuses with Down syndrome. This screening is done with AFP plus several other serum markers. Therefore, the same serum sample can be used concurrently to screen for fetuses affected with either NTDs or Down syndrome.

Screening Techniques

The observation of an association between low MSAFP levels and fetal aneuploidy was first reported in 1984 (19) and subsequently verified by a prospective, multicenter collaborative study (20). Analysis of other serum markers, including hCG and uE₃, enhances the detection rate of fetuses with Down syndrome.

Maternal Serum Alpha-Fetoprotein. The median MSAFP level in pregnant women carrying fetuses with Down syndrome is about 0.8 MoM of that of control pregnancies. There is a more extensive overlap of MSAFP distributions between the unaffected fetuses and fetuses with Down syndrome than seen with NTDs (Fig. 2). With most laboratories, a patient's result is considered to be positive when the combination of her age and MSAFP level gives her a risk equivalent to the a priori risk of a 35-year-old woman. This is usually a 1:270 midtrimester risk for the occurrence of Down syndrome. In contrast to the absolute cutoff of 2.0 or 2.5 MoM used in NTD screening, Down syndrome screening uses a series of age-specific cutoff levels for each MSAFP level. That is, for the same MSAFP level, there is a direct relationship between the age of the patient and the chance of her result being designated as positive.

Human Chorionic Gonadotropin. Human chorionic gonadotropin is secreted by the syncytiotrophoblasts and is first detectable in maternal blood on about day 8 after ovulation. During the second trimester, hCG levels decline until about 29 weeks of gestation and remain at that level until term. Although it was previously suggested that serum levels of hCG might enhance the detection rate of a fetus with

Down syndrome (21), supportive clinical data were first introduced in a study in which 11 of 17 pregnant women carrying fetuses with Down syndrome had an hCG elevation in maternal serum of at least 2.5 MoM (22). Because the median hCG level is so elevated in fetuses with Down syndrome in relation to control pregnancies, hCG is the most sensitive maternal screening marker for the detection of fetal Down syndrome (23). Additionally, the free beta subunit of hCG is equivalent to the measurement of the total hCG molecule in triple marker screening (24, 25).

Unconjugated Estriol. The synthesis of uE₃, a steroid hormone, is modulated by the placenta, fetal adrenal glands, and fetal liver. Lower second-trimester levels of maternal serum uE₃ have been reported in fetuses affected with Down syndrome (26). Like AFP, levels of uE₃ are about 25% lower in affected than unaffected pregnancies. The addition of uE₃ to maternal serum screening using AFP and hCG decreases the false-positive rate by about 25% (27), effectively decreasing the number of amniocenteses while achieving the same level of detection. The use of uE₃ also allows the ability to screen for trisomy 18.

Interpretation of Results

Given that all three analytes are independent of maternal age and are only weakly correlated with each other (28), they can be used in combination with maternal age to calculate a patient-specific risk for carrying a fetus with Down syndrome. The detection rate for fetuses with Down syndrome is 60%, with a false-positive rate of about 5%. Therefore, the detection rate using all three markers is superior to the 20–25% detection rate achieved using MSAFP alone (28). These results have since been prospectively verified by several groups (29, 30). The parameters should not be interpreted individually (ie, any one by itself), as this will significantly increase the false-positive rate without improving sensitivity substantially.

As with screening for NTDs, an accurate gestational age is essential. Unlike screening for NTDs, repeat MSAFP testing is not recommended because low values statistically tend to normalize toward the mean value; the effect of a repeat multiple marker result may be to erroneously reclassify a patient's result as negative. The BPD is a more sensitive estimation of gestational age in the second trimester because the long bones of fetuses with Down syndrome may be shorter when compared with other fetal measurements (31). If gestational age has been verified and the patient's result is found to be positive, she should be offered genetic counseling regarding the risks and benefits of amniocentesis.

Ultrasonography is the most accurate method of dating gestation. If an ultrasound examination places a patient at a gestational age at which maternal serum screening is

inaccurate (that is, before 15 weeks of gestation in most laboratories), the maternal serum screening result should be disregarded, and repeat screening should be offered at an appropriate time in gestation (generally between 15 and 20 weeks of gestation). It should be emphasized that this is the only instance in which it is appropriate to repeat a multiple marker screening result. However, in patients with accurate dating of gestational age, caution must be exercised; a small-for-dates fetus may actually be growth restricted, secondary to aneuploidy. Ultrasonography may also help distinguish an affected fetus if findings such as hyperechoic bowel, increased nuchal skinfold measurements (≥ 6 mm), or complex heart disease are seen. However, it must be remembered that ultrasonography is also a screening test and that an affected fetus may have a normal sonographic evaluation.

Correction factors for maternal race, weight, and insulin-dependent diabetes mellitus are used for MSAFP in screening for fetuses with Down syndrome or an NTD. Currently, there are no data to interpret triple marker screening in multiple gestations.

Trisomy 18

In contrast to the biochemical profile of pregnancies with Down syndrome, in the screening pattern of some trisomy 18 pregnancies, all three markers are substantially lower than expected. In one study, 60% of fetuses with trisomy 18 were identified (32). Since fetuses affected with trisomy 18 may have NTDs or ventral wall defects, this method of screening is useful for affected fetuses without open defects. This pattern of screening markers is rare and cannot be due to poor gestational dating. The ability to screen for trisomy 18 pregnancies can be advantageous since it adds little to the positive rate and can help identify (through prenatal diagnosis) a serious, usually lethal disorder for which the family may have an earlier opportunity to make informed choices.

Screening in Women Age 35 and Older

Two prospective population studies with complete fetal chromosome ascertainment have demonstrated the effectiveness and limitations of serum screening for Down syndrome detection in older women. The first study evaluated 3,896 women who underwent only MSAFP screening before genetic amniocentesis for the indication of advanced maternal age (33). With a risk cutoff of at least 1:270, 85% of cases of fetal Down syndrome were detected, with an amniocentesis rate of 63%. A second report used a similar study protocol but performed multiple marker screening on 5,385 women of advanced maternal age before amniocentesis with a second-trimester cutoff of 1:200 (34). The detection rate of Down syndrome was

89%, with an amniocentesis rate of 25%. Both the amniocentesis rate and the detection rate increased with advancing maternal age. For example, in women age 40, the detection rate was 91% and the amniocentesis rate was 40%, but at age 35, the detection rate was only 65%.

The incidence of sex chromosome aneuploidies, which include 47,XXY and 47,XYY, increases with advancing maternal age. Serum MSAFP screening has been reported to detect 44–50% of such anomalies in women older than 35 (33, 34).

At this time, multiple marker testing in women over the age of 35 cannot be recommended for routine Down syndrome screening as an equivalent alternative to offering prenatal cytogenic diagnosis. However, it may be offered as an option for those women who do not accept the risk of amniocentesis or chorionic villus sampling or who wish to have this additional information prior to making a decision about having amniocentesis. If serum screening for Down syndrome is requested by a patient over the age of 35, the patient should be informed of the higher rate of a positive screening test in this age group. The patient should also be informed of the diminished ability of screening to detect Down syndrome and certain other chromosome abnormalities, such as 47,XXX and 47,YYY, when screening with this approach is compared with diagnostic testing by chorionic villus sampling or amniocentesis.

Other Screening Methods Currently Under Investigation

Although maternal serum screening with the use of double or triple markers is clearly superior to the use of MSAFP alone when screening for fetal Down syndrome, this method still fails to detect 40% of Down syndrome in women less than 35 years of age. Therefore, many other screening analytes, including PAPP-A, urinary beta-core, dimeric inhibin, and human placental lactogen, are currently being investigated for use in the first and second trimesters to determine whether they alone, or in combination, will increase detection to a rate greater than the current 60%. The extraction of fetal cells from the maternal circulation is a promising new technique that may eventually be used for screening or diagnosis, may improve diagnosis, and may decrease the need for serum markers or for invasive procedures.

Summary

Maternal serum screening offers women the ability to increase the detection of open fetal defects, Down syndrome, and trisomy 18. After being informed of the risks and advantages of serum screening, a patient may elect to be screened. Counseling must emphasize that serum screen-

ing for these disorders is voluntary, and patients must be aware that further evaluation, if their results are classified as positive, may include amniocentesis. Physicians should have access to genetic services and reliable laboratories to assist them in the management of maternal serum screening and genetic procedures. Special attention must be given to the older gravida to help her make an appropriate personal decision regarding screening and genetic testing. Patients receiving positive results from a definitive test (karyotype or, possibly, ultrasonography) should have access to adequate counseling, including the availability of support groups and pediatric surgeons.

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مشروع العناية بالأم والطفل بطاقة المستفيدة

تاريخ فتح الملف ____/____/١٩ ____ اسم المركز : ____ رقم البطاقة : ____

اسم المستفيدة : ____ اسم العائلة : ____ اسم الزوج : ____

محوّلة من : ____ وضع الإدخال: حامل ____ بعد الولادة ____ أخرى ____

الخلفية الاجتماعية
المحافظة : _____ المدينة : _____ تلفون : _____
العمر : _____ هل أنت موظفة (داخل او خارج المنزل) نعم _____ لا _____
التحصيل العلمي : (_____) (عدد السنوات كاملا)

التاريخ الطبي الشخصي (التأكد من الأمراض الموجودة في المستفيدة)
السكري _____ ارتفاع ضغط الدم _____ أمراض القلب _____ اعتلال وراثي _____
أخرى _____ (تفاصيل)

تاريخ العائلة الطبي (التأكد من وجود أي أمراض في المقربين)
السكري _____ ارتفاع ضغط الدم _____ أمراض القلب _____ اعتلال وراثي _____
أخرى _____ (تفاصيل)

تاريخ الولادات السابقة
عدد الولادات الحية _____ عدد الولادات الميتة _____ عدد الاجهاضات _____
عدد الأطفال الموتي _____ عدد الأطفال الأحياء _____ مجموع الأحمال _____
ملاحظات :-

كيف سمعت عن مشروع العناية بالأم والطفل في مرحلة ما بعد الولادة
تلفزيون _____ راديو _____ مواد مطبوعة _____ أقرباء أو أصدقاء _____ جرائد _____ أخرى _____

الرعاية الصحية قبل الولادة - الزيارة الأولى

آخر دوره شهرية _____ اليوم المتوقع للولادة _____ حمل خطر _____
 فئة الدم _____ Rh _____ Hb _____ لجسام مضادة لالتهابات الكبد : نعم _____ لا _____
 تاريخ التطعيم : الجرعة الأولى _____ الجرعة الثانية _____

الرعاية الصحية قبل الولادة - زيارات متابعة

التاريخ	مدة الحمل	حجم الرحم	نبض الجنين	ضغط الدم	الوزن	فحوصات / تحاليل / علاجات	اسم الطبيب	تاريخ المراجعة

ملاحظات :

الرعاية الصحية بعد الولادة (الزيارة الأولى)

تاريخ الزيارة _____ (يرجى إعادة كتابة التاريخ في آخر ورقة)

نتيجة الحمل : ولادة حية _____ إجهاض _____ ولادة ميتة _____

تاريخ الولادة _____ طريقة الولادة : طبيعية _____ باستعمال أدوات طبية _____ قيصرية _____

مكان الولادة : نفس المستشفى _____ المنزل _____ مكان آخر (حدد) _____

تم وضع لولب بعد الولادة فوراً : نعم _____ لا _____ مضاعفات _____

زيارة المولود الجديد الأولى : الاسم : _____ ذكر _____ أنثى _____

اعتلال جسد _____ دي وراثي _____ ي : _____ (اش _____ رح _____)

إنقطاع الدورة : نعم _____ لا _____

رضاعة طبيعية _____ نعم = الرضاعة الطبيعية كاملة _____ شبه كاملة _____

معلومات تاريخ تنظيم الأسرة

الطريقة المستعملة سابقاً _____ المدة بالاشهر _____ السبب في التوقف _____

_____	_____	_____
_____	_____	_____
_____	_____	_____

المشورة (يرجى التأكد بان المستفيدة على علم تام بالطرق التالية)

تاريخ أول يوم مشورة _____ / _____ / ١٩ _____ مقدمة المشورة _____

لولب _____ غرسات _____ حبوب _____ وافي ذكري _____

حقن مانعة _____ LAM _____ التعقيم الجراحي _____

زيارة بعد الولادة

زيارة الطفل

زيارة الأم

تاريخ المراجعة	الوقت	ملاحظات	التغذية	الوزن	الطول	محيط الرأس	محيط البطن	القلب	ملاحظات	الوقت	ملاحظة الأم	الوزن	الطريقة	طعامات الطفل	التاريخ
															الزيارة الأولى

١ - مستخدم جديد	٢ - نزول	٣ - نزع / توقف	٤ - علاج	١ - التطعيم	٢ - متابعة نمو	٣ - فحوصات
٥ - تحويل	٦ - متابعة	٧ - مشورة	٨ - فحص نسائي / شدي	٤ - علاج	٥ - تحويل	٦ - أخرى
٩ - فحص جهاز	١٠ - مسحة عنق الرحم	١١ - تبادل	١٢ - فحص حمل			
١٣ - أخرى						

يحول الى مركز _____ محافظة _____

CPP PROJECT CLIENT CARD

Date Record Opened: _____ Center Name: _____ ID Number: _____

Client's Name: _____ Family Name: _____ Husband's Name: _____

Referred From: _____ Admission Status: Antenatal ____ Postpartum ____
Other ____

Socioeconomic Background

Governorate: _____ City : _____ Tel No : _____

Age: ____ (Year) Working outside the house ____ Yes ____ No

Education: ____ (Number of years completed)

Personal Medical History

 Check the diseases that are found in the client

Diabetes ____ Hypertension ____ Heart Disease ____ Genetic Disorders ____

Other ____ (Explain)

Family Medical History

 Check the diseases that are found in any of the close relatives

Diabetes ____ Hypertension ____ Heart Disease ____ Genetic Disorders ____

Other ____ (Explain.....)

OB/GYN History

Number of livebirths ____ Number of stillbirths ____ Number of abortions ____

Number of dead children ____ Number of living children ____ Total number of pregnancies ____

How did you hear about the CPP Center?

____ TV ____ Radio ____ Printed Material ____ Relatives/friends ____ Newspapers ____ Other

Antenatal Care - First visit

L.M.P. _____ E.D.D. _____ Risk Pregnancy _____

Blood Group ____ Rh ____ Hb _____ Antibodies for Hepatitis ____ Yes ____ No

Vaccination Dates: TT1: _____ TT2: _____

Antenatal Care - Follow-up Visits

Date	Gestation	Fundus	FHS	BP	Weight	Lab. & USG Findings	Dr. Name	Return Date

Notes:

Postpartum Care First Visit : Date of visit : ____ ____ ____ (Please copy this date to the last page)

Outcome of Pregnancy : ____ Live Birth ____ Abortion ____ Stillbirth

Date of Delivery : ____ ____ ____ **Method of Delivery :** ____ SVD ____ Instrumental ____ Cs

Place of Delivery : ____ Same Hospital ____ House ____ Other Institutions (Name.....)

Post Placental IUD inserted ____ Yes ____ No **Complications :**

Newborn First Visit : Name : _____ Male ____ Female ____

Congenital Disorder : ____ (Explain)

Bleeding Stopped: ____ Yes ____ No

Breastfeeding : ____ Yes ==> ____ Exclusive breastfeeding ____ Partial breastfeeding

Family Planning History :

Methods Used Before	Duration	Reason for Dropout
_____	_____	_____
_____	_____	_____
_____	_____	_____

Counseling : (Please check if the client has been informed fully on the following methods)

Date of First Counseling : ____/____/____ **Counselor Name** _____

IUD ____ Norplant ____ Pills ____ Condom ____

DMPA ____ LAM ____ Sterilization ____

Postpartum Visits

Mother's Visit

Child's visit

Date	Services Provided	Method	Qty	BP	Wt.	Remarks	Staff	Services Provided	Wt	Ht	H.C	Vac.	Remarks	Staff	Return Date
First Visit															

- | | | | | | | |
|---------------|---------------|-----------------|---------------------|----------------|----------------------|----------------|
| 1. New User | 2. Resupply | 3. Removal/Stop | 4. Treatment | 1. Vaccination | 2. Growth Monitoring | 3. Examination |
| 5. Referral | 6. Control | 7. Counseling | 8. Gyn /Breast Exam | 4. Treatment | 5. Referral | 6. Other |
| 9. Ultrasound | 10. Pap Smear | 11. Replace | 12. Pregnancy test | | | |
| 13. Other | | | | | | |

Referred to _____ Center in _____ Province

ANTENATAL

STAFFING OF CPP CENTERS

A. MANAGER

B. PHYSICIAN

- OBSTETRICIAN GYNAECOLOGIST
- FAMILY PHYSICIAN
- PEDIATRICIAN

C. NURSES

- MIDWIFE
- STAFFNIRSE
- PRACTICAL NURSES

D. COUNSELORS

E. RECEPTIONIST

F. MAIDS

ANTENATAL

FREQUENCY OF VISITS

FIRST 28 WEEKS	:	EVERY 4 WEEKS
28 - 36 WEEKS	:	EVERY 2 -3 WEEKS
36 WEEKS AND OVER	:	EVERY WEEK

Flexibility is desirable

ANTENATAL

FIRST VISIT

COMPLETE HISTORY

1. GYNAECOLOGICAL INCLUDING
2. OBSTETRICAL HISTORY
3. MEDICAL AND SURGICAL HISTORY
4. ENVIRONMENTAL EXPOSURE
5. FAMILY HISTORY
6. SOCIAL FACTORS
7. REVIEW OF SYSTEMS

ANTENATAL

FIRST VISIT

PHYSICAL EXAMINATION

1. COMPLETE PHYSICAL EXAMINATION (HEAD, HEART, LUNGS ...)
2. PELVIC EXAMINATION (AS INDICATED)
 - a) EXTERNAL GENITALIA AND VAGINA
 - b) CERVIX
 - c) UTERUS
 - d) ADNEXA

ANTENATAL

FIRST VISIT

ESTIMATED DATE OF CONFINEMENT (EDC)

1. LMP
2. UTERINE SIZE
3. ULTRASOUND

ANTENATAL

FIRST VISIT

ROUTINE SCREEN

1. COMPLETE BLOOD COUNT (CBC)
2. ABO TYPING
3. Rh FACTOR
4. URINALYSIS
5. SEROLOGIC TEST FOR SYPHILIS
6. RUBELLA TITER
7. HEPATITIS B SURFACE ANTIGEN

ANTENATAL

FIRST VISIT

SPECIALIZED TESTS

1. HUMAN IMMUNODEFICIENCY VIRUS
2. HEMOGLOBIN ELECTROPHORESIS
3. HERPES CULTURES
4. URINE TOXICOLOGY

ANTENATAL

FIRST VISIT

PATIENT EDUCATION

1. NUTRITION (CALORIES, FOLIC ACID, IRON)
2. WORK
3. EXERCISE
4. SMOKING
5. SEXUAL RELATIONS
6. FETAL MOVEMENTS
7. WARNING SIGNS

ANTENATAL

FIRST AND EVERY VISIT

EDUCATION

1. **BREASTFEEDING**
2. **BIRTH SPACING**
3. **IMPORTANCE OF POSTPARTUM VISITS**

ANTENATAL

SUBSEQUENT VISIT

STANDARD ASSESSMENT

**MATERNAL WEIGHT - BLOOD PRESSURE
UTERINE SIZE - FETAL HEART TONES
EDEMA, PROTEINURIA, GLUCOSURIA**

EDUCATION

BIRTH SPACING - BREASTFEEDING

ANTENATAL

RISK ASSESSMENT

**LOW RISK
HIGH RISK
VERY HIGH RISK**

REPRODUCTIVE HISTORY - MEDICAL/SURGICAL HISTORY - PRESENT PREGNANCY

(A special chart has been devised for scoring)

ANTENATAL

COUNSELING

- 1. GENETIC**
- 2. LACTATION
BREASTFEEDING
LACTATIONAL AMENORRHEA METHOD (LAM)**
- 3. PHYSIOLOGY OF LABOR**

ANTENATAL

COUNSELING - BIRTH SPACING

BREASTFEEDING MOTHERS

1. LAM
2. BARRIER METHODS
3. IUD: IMMEDIATE POSTPARTUM
6 WEEKS POSTPARTUM
4. PROGESTIN ONLY CONTRACEPTIVES
5. TUBAL LIGATION
6. VASECTOMY

ANTENATAL

COUNSELING - BIRTH SPACING

NON BREASTFEEDING MOTHERS

1. BARRIER METHODS
2. IUD (IMMEDIATE POSTPARTUM AND SIX WEEKS)
3. PROGESTIN ONLY CONTRACEPTIVES
4. COMBINED ORAL CONTRACEPTIVES (3 WEEKS AFTER
DELIVERY)
5. TUBAL LIGATION
6. VASECTOMY

ANTENATAL

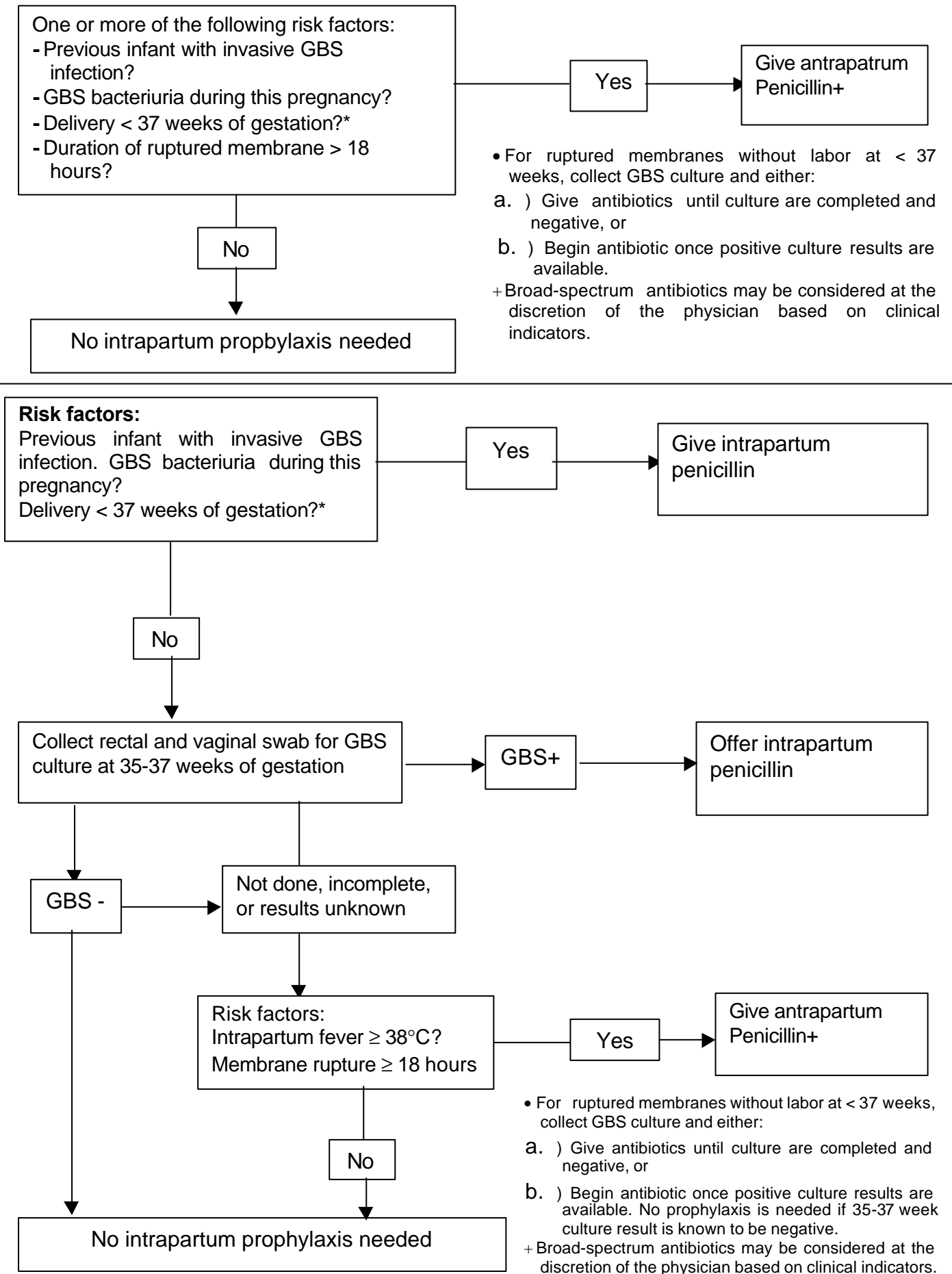
TEENAGE PREGNANCY

MORE COMPLICATIONS

**LOW BIRTH WEIGHT
SUDDEN INFANT DEATH
POOR NUTRITION
PHYSIOLOGICAL AND PSYCHOLOGICAL IMMATURITY**

Fig.1

Prevention strategy for early-onset group B streptococci (GBS) infection using prenatal screening at 35-37 weeks (Center for Disease Control and prevention. Prevention of prenatal group B streptococcal disease: a public health perspective. MMWR 1996; 45 [RR-7]: 1-24)



Recommended regimens for intrapartum antimicrobial prophylaxis for perinatal group B streptococcal infections.

Recommended	Penicillin G, 5 mU I.V. Load, then 2.5 mUs I.V. every 4 hrs. until delivery
Alternative	Ampicillin, 2 g I.V. load, then 1 g I.V. every 4 hrs. until delivery
If penicillin-allergic, Recommended	Clindamycin, 900 mg I.V. every 8 hrs. Until delivery
Alternative	Erythromycin, 500 mg I.V. every 6 hrs. until delivery

* **Note:** If patient is receiving treatment for amnionitis with an antimicrobial agent active against group B streptococci (e.g., ampicillin, penicillin, clindamycin, or erythromycin), additional pro-phylactic antibiotic are not needed.

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INTRAPARTUM

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INTRAPARTUM CARE

The mother in labor needs all the assistance possible and needs to be prepared mentally as well as physically. This is the end of ten (10) lunar months and is a very happy moment. A good outcome is essential for both mother and baby.

1. CARE OF THE MOTHER

- A. Assessment
- B. Emotional support during the three stages
- C. Monitoring during the stages of labor
- D. Preparation of delivery area (including C-Section area)
- E. Caring for complications (Premature labor, etc.)
- F. Administering drugs as per protocols (Syntocinon, Magnesium Sulfate, Prostaglandins, Diazepam)

2. CARE OF THE FETUS

- A. Monitoring FHR
- B. Preparation of Incubator/Warmer

ADMISSION AND ASSESSMENT OF PATIENTS - CENTER OF BIRTH

Purpose: Patients admitted to the Labor Unit will be evaluated so that optimal and safe care will be given to mother and fetus.

Policy: Patients of 28 weeks gestation or more with pregnancy related problems, i.e., premature labor, vaginal bleeding, fever, PROM, pre-eclampsia, trauma, UTI, decreased fetal movements, and other complications, will be admitted to the Labor Unit.

Guidelines:

1. The nurse meets and greets the patient in the hall and takes her to labor room. If necessary, an admission shower may be given after the admission, vital signs and admissions information are obtained. Privacy and comfort to be provided to the patient.
2. Admission assessment may be performed by a midwife.
3. All data-based assessments will be completed within 1 hour of admission to labor and delivery.
4. If necessary, assist the patient to undress and get into bed. Locate the patient's prenatal record and obtain Labor Admission Packet and Baby Packet. Complete the plan of care for the laboring patient.
 - a. Patient's temperature
 - b. Patient's blood pressure
 - c. Patient's pulse and respiration
 - d. Patient's height and weight
5. Obtain assessment:
 - a. The number of pregnancies, EDD, lab work (from prenatal), any allergies, medications, or blood transfusions. Take history of this pregnancy and pre-existing conditions.
 - b. When her contractions started.
 - c. If and when membranes ruptured - color of fluid.
 - d. If she has any dentures or caps (location), contact lenses, eyeglasses, or other prostheses.

- e. Breastfeeding.
- f. PLANS FOR BIRTH SPACING
 - * LAM
 - * IUD after delivery of placenta (special training required)
 - * Tubal ligation
 - * Injectable (if not breastfeeding and none of the above)

NOTE: Counseling regarding birth spacing should never take place during labor and should be done during the antepartum visits or after the mother has recovered from the immediate physical and emotional stress of childbirth.

- 6. Raise siderails of patient's bed if the patient is in active labor or has been sedated, or at the nurses' direction.
- 7. Label patient's clothing bag and suitcase with the patient's label. Be sure all valuables and/or large amounts of money are given to the family.
- 8. Vaginal examination may be done unless contraindicated by the patient's condition.
- 9. Enema:
 - a. To be given to patients if desired for a term pregnancy, unless too far advanced in labor or other contraindications.
 - b. Contraindications for enemas pending notification of physician:
 - 1) Questionable presenting part
 - 2) Unengaged head with ruptured membranes
 - 3) Bleeding of unknown etiology
 - 4) Hypertension
 - 5) History of rapid labor with no physician available
 - 6) Fetal distress
 - 7) Patient refusal

10. Charting:

- a. Label all pertinent parts of the chart/labels.
- b. Plan for care should have been completed with patient on admission.
- c. Complete the labor, delivery, and newborn record which includes:
 - 1) Maternal history of the patient: previous pregnancies, number of pregnancies, number of living children
 - 2) EDD and number of weeks
 - 3) Any pertinent history on patient; blood work
 - 4) Time labor started
 - 5) If membranes ruptured prior to admission, make note of this and time ruptured
 - 6) If membranes ruptured artificially per physician, note the time
 - 7) Record FHR and presenting part

11. Start nursing notes with admission history. Documentation of reassessment of patient needs to indicate patient/husband involvement.

12. Mothers with ruptured membranes are on bedrest unless otherwise ordered by the physician. The amount and character of discharge should be recorded. Temperature is taken every four (4) hours.

13. For bedrest mothers with vaginal bleeding, refer to antenatal ward

14. If a mother starts labor or is in labor, refer to labor ward.

15. When the patient is not in labor, is undelivered and needs observation, she will be transferred to antenatal unit after a physician's approval. Plans for child spacing may be discussed at this time and counseling provided.

CARE OF PATIENT DURING LABOR

Purpose: To safely monitor and care for the parturient in labor.

Policy: All parturient in labor will be cared for per following guidelines.

Guidelines:

1. Emotional support of laboring family:

- a. Relieve tension in the parturient and her family by informing them of the parturients progress in familiar and non-frightening terms.
- b. Explain all procedures and policies clearly.
- c. Avoid discussion of other parturient in the immediate presence of, or within hearing range of the parturient or her family.
- d. Treat each family as individuals, respecting their modesty and personal feelings.
- e. If possible, a nurse or someone should remain with each parturient in active labor. A reassuring, kind attitude can do much to allay a parturient fears, make her labor less tiring and the experience, as a whole, more meaningful.

2. Diet:

- a. The nurse should check with the physician regarding diet of parturient not in active labor.
- b. At the discretion of the nurse, an active labor parturient may have ice chips or popsicle.

3. Observations:

- a. Vital signs:
 - 1. First stage: Blood pressure and pulse q 30 min. (except syntocinon, epidural) Check contractions and FHS q 15 minutes.
 - 2. Second stage: FHS after each contraction as possible.
 - 3. Postpartum: Blood pressure, pulse, and fundal checks q 15 min. x 4.
 - 4. Ruptured membranes: Temperature q 2 hrs. Blood pressure, pulse, FHS as indicated by labor.
 - 5. Pre-eclampsia: Blood pressure, pulse, respiration's q 30 min. FHS, and uterine contractions q 15 min.
 - 6. Induction & agmentation: Blood pressure, pulse, FHS and uterine contractions q 15 min.
 - 7. Epidural: Blood pressure, pulse, FHS q 15 min.
 - 8. Antepartum bleeding: Blood pressure, pulse, and FHS q 15 min.
 - 9. Postpartum bleeding: Blood pressure and pulse q 15 min. until stable.
- b. External monitor may be applied intermittently 20 min. q 2 hr. to all patients, and maintained continuous if medicated or otherwise indicated.
- c. Vaginal examinations may be done on all parturient in labor every 2 hours unless otherwise ordered.
- d. Watch for signs of active progress, such as increased bloody show, rupture of membranes, bearing down, etc.
- e. Check voiding - be alert for distended bladder.
- f. Watch for and report these danger signs:
 - 1) BP over 140 systolic and 90 diastolic.
 - 2) FHS below 110 and above 160 and any abnormal variation as to quality or rhythm. Report any abnormal deceleration noticed.
 - 3) Any abnormal bleeding.
 - 4) Prolapsed cord, hand, or foot.
 - 5) Twitching and/or signs of impending convulsions.

- 6) Headache, dizziness, spots before eyes, or epigastric pain.
- 7) Edema of face, hands or feet.
- 8) Discolored amniotic fluid.
- 9) Elevated temperature $\geq 38^{\circ}\text{C}$ and above.
- 10) Signs of shock, such as rapid pulse, cyanosis, and pallor Drop in BP.
- 11) Watch for a uterus that does not relax well between contractions.
- 12) Persistent vomiting.

4. Vaginal examination:

- a. Obtain sterile glove and lubricant.
- b. Place patient on back with abducted flexed thigh.
- c. Drape patient with top sheet.
- d. Gently insert index and middle finger in vagina.
- e. Determine dilatation, effacement of cervix. Membranes, then the presenting part, station and clinical pelvimetry.
- f. Discard glove.
- g. Record findings on patient's chart, blackboard and partogram.

Note:

- A. Descent of the fetal head on abdominal examination will be recorded according to the **"Rule of Five"**:

For convenience, the width of five fingers is a guide to the expression of fifths of the head above the brim. A head which is mobile above the brim will accommodate the full width of five fingers (closed).

As the head descends, the portion of the head remaining above the brim, will be represented by fewer fingers (4/5th, 3/5th, etc.)

It is generally accepted that the head is engaged when the portion above the brim is represented by 2 fingers width or less.

Descent of the head should always be assessed by abdominal examination immediately before doing a vaginal examination.

B. The findings of the **pelvic examinations finding** should be recorded as follows:

1. Dilation of cervix in centimeters (from 0 to 10 centimeters).
2. Effacement in percentage (compared to non-pregnant state) in increments of 25%.
3. Presenting parts (vertex Braw, Face), (Frank, complete and Incomplete breech).
4. Station of presenting part relative to ischial spines: (0 at spines, - above spines, + below spines).
5. Status of membranes (ruptured or not), amount of fluid and color.

C. Partogram (for progress of labor)

Date: 25.10.87
 Consultant: JONES
 Age: 254
 Unit no: 123456

Surname: SMITH
 First name: ANN
 EDD: 28.10 USS: 28.10
 Parity: 0

On admission in labour:
 Membranes intact ☒
 Date/time of rom ☒
 Polypation:
 SFH in CMS 38
 Clinical est of fetal wt: 3.3 kg

Special instructions:
SHORT STATURE
~ 147 cm
 ICF: ☐
 Pg Press (15) (2) (3)
 Arm: 1/N
 Synto: 1/N
 Cervical scores: ☐

Fetal Heart
 Maternal B/P
 Maternal pulse
 Maternal temp.
 CERVIX: Dilatation 0-10 cm.
 ABDOMEN: DESCENT
 MINIMAL
 FILLS palpable

Times
 Vaginal examinations
 Signature
 Amniotic fluid
 Length of cervix
 Moulding/caput
 Station
 Position
 Cephalic/breast
 Oxytocin
 Contractions per 10 min
 Drugs & IV fluids
 Urinalysis
 Test Amount
 Third stage
 Blood loss 350 ml

Partogram grid showing fetal heart rate, maternal vital signs, cervical dilation, and station over time.

Partogram summary table:

Time	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Signature	AB		AB		CD		CD		CD		CD		CD		CD		CD
Amniotic fluid	M1		Stom		CL		CL		CL		CL		CL		CL		CL
Length of cervix	1.5 cm		0 cm		2 cm		2 cm		2 cm		2 cm		2 cm		2 cm		2 cm
Moulding/caput	-1		-1		-1		-1		-1		-1		-1		-1		-1
Station	-2		-2		-2		-1		0		+1		+1		+1		+1
Position	OT		OT		OT		OT		OT		OT		OT		OT		OT
Cephalic/breast	OT		OT		OT		OT		OT		OT		OT		OT		OT
Oxytocin	0		0		0		0		0		0		0		0		0
Contractions per 10 min	2		2		2		2		2		2		2		2		2
Drugs & IV fluids																	
Urinalysis	-ve		N1		N1		N1		N1		N1		N1		N1		N1
Test Amount	100		100		100		100		100		100		100		100		100
Third stage																	
Blood loss																	

Placenta/membranes
 Date: 25.10.87
 Times: 20 20
 Placenta: Complete ☒
 Membranes: Complete ☒
 Incomplete ☐
 Ragged ☐
 Abnormality: ☐

Placenta
 Weight: 560 g
 Cord insertion: C
 No. vessels: 1 2 3
 Sent path lab: yes
 Abnormality: ☐

Method
 OCT: ☒
 Maternal effort: ☐
 MNP: - GA ☐
 - Epidural: ☐

Drugs used
 Drug: STANDARD
 Dose: 1. A-MP
 Route: M ☒
 Anterior shoulder: ☒
 After birth: ☐

Baby
 Boy: ☒
 Girl: ☐
 BW: 3.80 kg
 APGARs: 1 9
5 10

Fig. 2.3. Partogram.

5. Amniotomy:

- a. Prepare patient as for sterile vaginal examination.
- b. Obtain Kocher or hook for rupturing of membranes.
- c. Check and record FHS following amniotomy. Note quantity and color of amniotic fluid. Document this information, along with the time the amniotomy was performed, on the parturient chart in the nurse's notes, and on the Nursery Newborn Record.

6. Syntocinon

May be administered only by physician order, following the protocol.

7. First stage:

As parturient progresses through 1st stage of labor, record on nurses' notes and monitor FHS and start partogram.

- a. Record vital signs, contractions, and pain tolerance q 30 minutes.
- b. Record FHR q 15 minutes.
- c. Record type, when and where I.V. started, site and rate.
- d. Record parturient tolerance for pain and need for pain medication. If medicated, record response in 30 minutes after administration.
- e. Record who performed vaginal exam and when physician was notified of any information or when physician entered the room.
- f. Record any abnormal occurrences to mother and fetus, and report to physician.
- g. When parturient is approaching delivery (multiparas = 8 cm or primipara 10 cm), set up second stage room.

8. Second stage (fully dilated cervix)

Second stage room set-up:

- a. See that the following items are on birthing table:
 1. Delivery and episiotomy sets
 2. Anesthesia supplies (as needed)
 3. Blood tubes

4. Gown
5. Gloves
6. Sutures (as needed)
7. Oxygen Supply
8. Suction System

b. Check infant airshield:

1. Turn on warmer.
2. Connect suction (80 mHg) with catheter and Oxygen (10 L/m) with bag.
3. Check laryngoscope and anything else special needed.

c. Draw up syntometrine and label.

d. Assist parturient and family as necessary with the delivery.

e. Cord blood collection:

Collect cord blood on all patients, for O+ ve and all negative blood types mothers:

- a) Fill out laboratory requisition
- b) Label all specimens "STAT" and send to lab as soon as possible.
- c) On lab request write:
 1. Mother's hospital number
 2. Time of delivery
 3. Mother's blood type
 4. Sex of infant and mother's first and last name
 5. Date
- d) For all tubes, stamp "cord blood", label mother's name and place on tube.

9. Care of Delivered Patient:

After the physician has delivered the placenta, the immediate postpartum period begins. **Insertion of an IUD may be done by a trained provider, if the mother has chosen this method.** If an IUD is inserted, the fundus and lochia will need to be monitored even if repair is still being conducted.

The patient needs to be checked for the following every 15 min x 4.

- a) Vital signs (blood pressure, pulse, and respiration)
- b) Fundus and Bleeding
- c) Perineum
- d) Bladder

On Doctor's order, I.V. line may be continued or discontinued, depending on above criteria.

After patient is stable, the nurse may transfer her to Postnatal ward and can be ambulated to the bath room.

DELIVERY LOG INFORMATION

The delivery statistic of the clinics affect the National Statistics. It is the responsibility of the nurse present at the delivery to fill in the information in the delivery log.

Items included are:

- 1) Delivery #
- 2) Name, age, GR/PARA
- 3) Gestational age
- 4) Hospital #
- 5) Kind of induction: medical or elective
- 6) Syntocinon
- 7) Maternal complications including TOL (Trial of Labor)
- 8) Type of delivery:
(NVD) (VE) (LFD) (C/S) (repeated C/S)
(Vaginal delivery after C/S)
- 9) Date and time of delivery
- 10) Episiotomy and repair
- 11) Complications of delivery
- 12) Blood type/Rh factor (mother and infant)
- 13) Sex
- 14) Tag #
- 15) APGAR 1/5 min
- 16) Weight
- 17) Cord pH and lactate
- 18)
- 19) Anesthesia - local, epidural, spinal, general, or pudendal
- 20) Nurse - present for delivery
- 21) Staff physician who assists Caesarean section
- 22) Attending physician or midwife who did the delivery

FETAL MONITORING

Purpose: To safely and effectively monitor the fetus during labor and delivery.

Guidelines:

1. Assess FHR prior to:

- a. Initiation of labor-enhancing procedures (e.g., artificial rupture of membranes)
- b. Periods of ambulation
- c. Administration of medications
- d. Administration or initiation of analgesia/anesthesia

2. Assess FHR following:

- a. rupture of membranes
- b. recognition of abnormal uterine activity patterns, such as increased basal tone
- c. administration of medications (at time of peak action)
- d. expulsion of enema
- e. urinary catheterization whenever indicated
- f. vaginal examination
- g. periods of ambulation
- h. evaluation of analgesia and/or anesthesia (maintenance, increase or decrease of dosage)
- i. Vag. Bleeding

3. Frequency of Monitoring

The intensity and method of fetal heart rate monitoring used during labor should be based on risk factors. It has been shown that intermittent auscultation at intervals of 15 minutes during the first stage of labor and after each contraction during the second stage is equivalent to continuous electronic fetal heart rate monitoring.

Procedure: Interpretation of Fetal Heart Rate tracing:

Normal range: 110 bpm to 160 bpm.

- a. Short Term Variability (STV) and Long Term Variability (LTV) tend to increase and decrease together.
- b. LTV (External and Internal Monitoring) measured over a period of 5-10 minutes of tracing, generally 3 to 5 cycles per minute of rhythmic fluctuations of waves of FHR:
 - Absent 0-2 bpm
 - Mod variability 3-5 bpm
 - Mod variability 6-15 bpm
 - Average variability 15-20 bpm
 - Marked variability > 25 bpm
- c. STV is a change in FHR from one beat to the next with internal monitoring.
- d. STV is present if FHR is 3 bpm or more.
- e. STV is absent if FHR is < 3 bpm.

Interpretation of periodic changes in Fetal Heart Rate tracing:
Accelerations - Transitory increases above baseline of FHR of ≥ 15 bpm for ≥ 15 seconds in response to fetal movement and uterine contractions is an indication of fetal central nervous system (CNS) alertness and wellbeing and is reassuring.
Acceleration is interpreted as present or absent.

4. **Early decelerations:** are those that begin early in the contracting phase with the onset but before the peak of the uterine contraction, and the recovery occurring at the same time the uterine contraction returns to baseline. They are uniform in shape and mirror image with contractions.

5. **Variable decelerations:** are those occurring anytime during the uterine contracting phase but are often concurrent with uterine contractions. The decelerations vary in intensity and duration, and frequently decelerate below the average FHR range.
6. **Late decelerations:** are those that begin late in the contracting phase with the onset at or after the peak of the uterine contraction, and the recovery occurring after the return of the contraction to the baseline.
7. **Prolonged decelerations:** are those of abrupt onset, lasting longer than 90 seconds or more, followed by loss of variability and post deceleration Fetal Tachycardia.

Whenever a **variable or late or prolonged deceleration** occurs, the patient is turned to her side, oxygen administered, syntocinon stopped and an obstetrician is consulted.

CAESAREAN SECTION

Purpose: To safely and effectively perform Caesarean Section in the Center for Birth.

Indications for Caesarean Delivery

1. Maternal indications:

- a. cephalopelvic disproportion
- b. Scarring, atresia, or stenosis in the genital tract
- c. Neoplasms
- d. Failure to progress
- e. Two previous caesarean sections
- f. Hysterotomy
- g. Extensive myomectomy
- h. In some cases of cervical suture or repair of incompetent os
- i. Antepartum Hemorrhage (placenta praevia)
- j. Failed induction

2. Fetal indications:

- a. Fetal distress
- b. Poor obstetrical history
- c. Prolapsed cord
- d. Placental insufficiency, IUGR, post dates, when induction fails
- e. Maternal diabetes - when induction fails
- f. Rh incompatibility - when induction and vaginal delivery would be difficult and for selected cases of fetal salvage
- g. Postmortem Caesarean - rarely successful
- h. Active Herpes type II infection with intact membranes
- i. Malpresentation and malposition
- j. Footling breech presentation

3. Miscellaneous:

- a. Elderly primigravida
- b. Successful surgery for vesico vaginal fistula and stress in continence
- c. Congenital uterine anomaly
- d. Failed instrumental delivery

Procedure:

Preparation for Caesarean Delivery:

1. All patients for C-Sections must have on chart:
 - a. History and Physical - to be done before surgery.
 - b. CBC, any other blood work requested - may be found on prenatal - X matched blood
 - c. Surgical consent.
 - d. Pre-op checklist completed.
 - e. Antacids should be administered pre operatively
 - f. Place bracelets on mother
2. Admit patient to Center for Birth, obtain history, complete baby chart, or paperwork, and obtain reassuring fetal tracing.
3. Remove all jewelry (wedding ring must be removed or taped). Dentures, bobby pins, contact lenses, prostheses must be removed.
4. Prepare abdomen.
5. Insert foley catheter; connect to drainage bag.
6. NOTIFY SUPERVISOR, NURSERY AND POSTPARTUM UNIT OF ALL C-SECTIONS.
7. A Delivery Room nurse must be in attendance at all C-Sections. A pediatrician should be attending
8. **Insertion of an IUD may be done by a trained provider, after delivery of the placenta, if the mother has chosen this method.**

Care of Baby - Caesarean Delivery:

1. Be sure equipment is in working order - resuscitator and oxygen at proper levels.
2. Suction Oropharynx
3. Receive baby in sterile draw sheet. Place in radiant warmer.. Stimulate baby while drying with sterile bath towel. If necessary, give oxygen.
4. Fill out Ident-a-band tags. Place bracelets on baby.
5. Clamp the cord, trim if necessary.
6. Get footprints.
7. Fill out remaining papers.

Standard of Care for Postpartum Admission Protocol for Caesarean Delivery Patient:

Process Criteria:

- 1.** Patient is transferred from stretcher to bed.
- 2.** A physical assessment is obtained, which includes vital signs (Temperature, Pulse, Respiration, BP), fundal height, lochia, bladder (Foley catheter), I.V., dressing, skin, lungs, and circulatory status of lower extremities.
- 3.** Post Op. order are completely followed
- 4.** Level of consciousness is assessed.
- 5.** Comfort level is assessed.
- 6.** Patient is reminded to turn and breathe deeply every two hours.
- 7.** Nursing assessment is completed when patient is alert and oriented.
- 8.** Patient is oriented to unit and nursery routine.
- 9.** Patient is instructed on use of nurse call-light and other siderail equipment.
- 10.** Parent-infant interaction is encouraged as much as patient and family desire.
- 11.** Patient problems and needs are identified and an appropriate nursing care plan is developed, documented, and implemented.
- 12.** Appropriate interventions are instituted when deviations are noted.

Outcome Criteria:

1. Patient has vital signs within normal range.
2. The involution process is within normal parameters.
3. Patient is adequately hydrated, as evidenced by adequate output.
4. Patient is comfortable.
5. Patient has interaction with infant as desired.
6. Establish lactation as soon as possible

INDUCTION OF LABOR USING PROSTAGLANDIN E₂ TABLETS

Purpose: Ripening of the cervix, allowing an easier induction of labor with syntocinon is usually done 6 hours prior to induction. To decrease the likelihood of a failed induction of labor and decrease the need for Caesarean Section because of a failed induction of labor.

Policy: Intravaginal insertion of Prostaglandin E₂ tablets for the ripening of unfavorable cervixes and the induction of labor. The tablet is used in pregnant women with maternal or fetal indications for the induction of labor.

Women who are candidates for use of the PGE₂ will be selected by their physicians. The physician will be responsible for discussing the protocol with the patient, obtaining the informed consent, and administering the prostaglandin tablet in the antenatal unit per protocol. A registered nurse will assist and monitor patient post procedure.

Contraindications:

1. Fever
2. Active Asthma
3. Ante-partum Hemorrhage
4. Allergy to Prostaglandin
5. Abnormal presentation
6. Pulmonary Cardiac Insufficiency

Prerequisites:

1. Vertex
2. Reassuring FHR
3. Informed consent obtained by MD
4. No regular uterine contractions
5. Physician readily available

Equipment:

1. Tablet from pharmacy with dosage as ordered per physician
2. Vaginal speculum
3. Sterile gloves
4. Fetal monitor
5. Ring forceps
6. Delivery light or (side lamp) at foot of bed

Procedure:

1. Patient should be admitted. Obtain tablet order from pharmacy. Tablet must be stored in the refrigerator until the procedure.
2. Before procedure is to begin, monitor patient for 20 minutes to obtain a reassuring pattern. Report non-reassuring pattern to physician.
3. When physician is available, place patient in lithotomy position with light at foot of bed. Lay head of bed flat for speculum procedure. Physician then performs speculum procedure to introduce tablet with forceps either in the posterior fornix or intra cervical. After procedure, patient should remain in bed for 20 minutes.
4. Monitor patient and fetus for two hours or until reassuring pattern is obtained.

SYNTOCINON INDUCTION AND AUGMENTATION

Purpose: To define what is current medical practice, the indications for syntocinon induction, and the management of patients undergoing syntocinon induction and augmentation.

Policy: Labor may be induced or augmented with syntocinon only after a physician who is responsible for the patient's care has evaluated the patient's condition, determined that induction or augmentation is beneficial to the mother or fetus, recorded the indication, and established a prospective plan of management.

A syntocinon drip may be monitored by the midwife alone, with the physician on immediate availability.

Indications:

In the antepartum period, syntocinon is indicated for the initiation or improvement of uterine contractions where this is considered desirable and suitable:

1. Pre-eclampsia at or near term.
2. When delivery is in the best interest for the mother or fetus.
3. When membranes are ruptured and vaginal delivery is indicated.
4. Stimulation or augmentation of labor:
5. Other indications
 - a. Selected cases of uterine inertia.
 - b. Adjunctive therapy in management of incomplete or inevitable abortion.

Contraindications:

1. Cephalopelvic disproportion.
2. Fetal malpresentations.
3. In obstetrical emergencies where the benefit to risk ratio for either the fetus or mother favors surgical intervention.
 - a. Severe pre-eclampsia of non-negotiable cervix with low Bishop's score.
 - b. In cases of fetal distress.
4. Hypertonic uterine patterns.
5. Patients with hypersensitivity to the drug.
6. Induction or augmentation of labor in those cases where vaginal delivery is contraindicated:
 - a. Invasive cervical carcinoma
 - b. Cord presentation or prolapse
 - c. Total placenta previa or partial placenta previa
 - d. Vasa previa
7. Any condition where there is a predisposition for uterine rupture is a contraindication for use of syntocinon antenatally except in unusual circumstances determined by the physician.
 - a. Previous major surgery on the cervix or the uterus
 - b. Overdistension of the uterus
 - 1) severe polyhydramnios
 - 2) multiple fetuses
 - c. grand multiparty
 - d. past traumatic delivery

Equipment:

I.V. 500 cc bag D5W, 1 straight I.V. tubing, stopcock to main line, 5 I.U. Syntocinon. Inject 5 units of Syntocinon into 500 cc D5W. Connect to I.V. and flush all the air bubbles through the system. Feed through I.V. and program as follows:

Dosage calculations:

5 units Syntocinon 500 cc D5W

15 drops = 1 ml = 10 mu

Note:

With the Syntocinon infusion, the patient must have primary I.V. running. Syntocinon infusion is to be piggy backed into primary I.V. infusion via stopcock.

Procedure:

1. Initiation and management of infusion:

- a. Review the patient's chart and history for induction indications, the maternal and fetal status, the clarity of the physician's orders; some physicians may want a blood type and screen, and Hb & Hct drawn prior to induction and/or augmentation.
- b. Assess the patient's understanding of the procedure.
- c. Explain the procedure and its implications for the patient as needed.
- d. Determine the baseline FHR and uterine activity level for 20 minutes prior to initiating the induction. The procedure should be accomplished with a continuous monitoring of the FHR and corresponding uterine activity.
- e. Begin the infusion.
- f. Advance to each established dosage level every 15-30 minutes as the uterine activity indicates and record in the nursing notes.
 - 1) Assess and record the FHR, uterine activity, BP, and pulse every 15 minutes while advancing the dosage level, then every 1/2 hour when the dosage level is stable.
 - 2) Stabilize the dosage level so that the contraction pattern does not exceed every 2-3 minutes, contraction 50-60 seconds duration with an intensity of 50-70 mm Hg pressure.

2. Dosage Regulation:

The initial dose should be 15 drops per minute unless otherwise ordered by the physician. The rate is increased gradually in increments of no more than 10 drops per minute every 30 minutes. The goal is to stimulate moderate to strong contractions of about 50 mm Hg intrauterine pressure which reoccur every 2-3 minutes and last 45-60 seconds. The uterus should relax completely between contractions. Do not exceed 48 drops/minute unless by physician's order.

3. The midwife should prepare the woman psychologically and give support throughout the procedure. Before the procedure is started, maternal vital signs and a baseline graph of the fetal heart rate should be recorded. The midwife should be able to interpret data from the maternal and fetal monitors, make a meaningful diagnosis, and be prepared to implement any emergency actions.

4. Emergency Intervention:

- a. Prolapsed umbilical cord - turn the syntocinon off, prepare patient for Caesarean delivery, place in Trendelenburg position, and support the fetal part, and have the additional staff notify the physician.
- b. Fetal distress - Immediate cessation of the syntocinon infusion, notify the physician, reposition on left side in Trendelenburg position, O₂ by mask @ 7 liters/min. if secondary to uteroplacental insufficiency (vary the maternal position if distress is due to cord compression).
- c. Tetanic contraction (90 seconds and/or 50 mm Hg) discontinue the syntocinon, notify the physician,

- d. Hypertonus (inadequate relaxation between contractions, and 1 minute or less between contractions) - discontinue the syntocinon; observe for fetal distress. When uterine relaxation occurs, may resume the infusion at a lower level if no fetal or maternal distress is present.
- e. Precipitate labor - Constant observation of the patient, i.e., affective behavior and periodic sterile vaginal exams to determine the progress of labor.
- f. Uterine bleeding, observe for signs of placental abruptio and/or uterine rupture.

CARE OF PATIENTS WITH COMPLICATIONS OF LABOR

Purpose: To safely monitor patient with a complication of labor to ensure optimal outcome for mother and infant .

Policy: Patients with complications of labor (a) Antepartum Bleeding, b) Breech Delivery, c) Multiple Birth, d) Prolapsed Cord, e) Uterine Inertia) will be monitored according to written guidelines.

Antepartum Bleeding:

1. Causes:

- a. Abruptio placenta - characterized by painful bleeding
- b. Placenta Previa - painless bleeding
- c. Ruptured uterus - rigid abdomen, constant and severe pain (bleeding may or may not be evident)

2. Guidelines:

- a. Remain with patient and reassure her while having someone else notify the physician immediately.
- b. Check vital signs and FHR q 5 minutes (more frequently if indicated by patient's condition) until stable and within normal limits.
- c. Begin I.V., if not already started, using #20 or #18 gauge I.V. canula if possible. Use Ringer Lactate 1000 cc initially, and, as soon as feasible, check with physician regarding preference in I.V. solution.
- d. Prepare for immediate delivery or C-section as indicated.
- e. Request "STAT" CBC and Type & Cross for two units whole RBC's as ordered by physician. As soon as possible, check with physician about other lab work.
- f. Keep patient as comfortable as possible but avoid use of analgesics which might have an adverse effect on already compromised fetus.

- g. Carry out procedures in a calm and efficient manner while offering the patient reassurance and explanation of what is going on.

Breech Delivery:

1. To be performed by a physician assisted by a midwife/nurse.
2. Since the cooperation of the patient in expelling the infant is so important in these cases, excessive sedation should be avoided.
3. Frequent check of the FHR as prolapse of the cord is often a complication. Visually inspect perineum for signs of prolapsed cord.
4. Anticipate Caesarean section per physician's request with anesthesia and pediatrician present.

Prolapsed Cord:

Guideline Criteria:

1. The cord is identified as being prolapsed.
2. Patient is placed in chest to knee position or anti Trendelenburg position.
3. Sterile gloves are put on. Hand is inserted into the vagina, displacing the presenting part off the umbilical cord. If the presentation is vertex, no pressure is placed on the fontanel.
4. The presenting part is continually kept off the cord while patient is transferred **to the operating room or until the fetus is delivered.**
5. Maternal support is offered by answering the patient's questions and providing concise information.
6. The above is documented in nursing progress notes.

Twins delivery :

Patient's care will be same as normal labor care except:

1. Two fetal hearts will be monitored.
2. Patient will be delivered by a senior physician. Pediatrician staff for both infants, and nurse for mother should be present,
3. OR will be set-up for possible C-Section and 2 warmers will be ready for infants with appropriate equipment for both infants.

Uterine Inertia (Ineffective Uterine Contractions):

Guidelines:

Patients with inefficient contractions require the utmost in good obstetrical care.

1. The midwife must maintain a cheerful outlook and optimistic attitude.
2. Avoid "fake" promises and attitudes of helplessness.
3. Patient should be carefully assessed by the physician
4. Hydration of this patient is essential.
5. Syntocinon augmentation should be started per physician's order. Analgesics should be given as indicated by a physician's order.
6. Engaging the patient in quiet conversation may be as effective as medication.
7. Do not forget good, basic nursing care:
 - a. Cooling back rub
 - b. Cleansing of lips
 - c. Offer patient use of mouthwash
 - d. Gauze square saturated with cold water for lips
 - e. Cool cloth to head

8. Watch for activity of bladder and bowels.

- a. A full bladder is a cause of great discomfort and may impede progress of labor. Assist the patient to the bathroom to void when possible. If patient is unable to empty a distended bladder, obtain a physician's order to catheterize.
- b. A distended rectum may impede the progress of labor. Administer soap solution enema if indicated and if ordered by a physician.

9. Avoid frequent vaginal examinations. Use good judgement.

10. Close watch of FHR:

- a. Deceleration, irregularity, or bradycardia in FHR should be reported.
- b. Report any presence of meconium or meconium stained amniotic fluid.

CONTROL OF POSTPARTUM BLEEDING

Purpose: To use syntocinon or methergine to produce intense uterine contractions to reduce postpartum bleeding after expulsion of the placenta.

Policy: A physician order must be obtained for therapy.

Equipment:

Prostaglandin F2a - 0.5 mg I.V.
Syntocinon ampule 10 units/ml
Methergine ampule 0.2 mg/ml

Guidelines:

1. Establish an I.V. line
2. Syntocinon may also be given I.V. The recommended dose is 5 - 10 units I.V. following delivery of the placenta.
3. Amine Ergot Alkaloids - Methergine (Methylergonovine Maleate) In the immediate post delivery period Methergine in a dose of 0.2 mg may be given IM or slow I.V. push (> 1 min) if syntocinon is not effective. Because both of these drugs cause an increase in BP, it should be monitored closely after administration. Any patient having an elevated BP should not be given Ergotrate or Methergine except in case of extreme emergency. The above dose may be repeated q 2- 4 hours, not to exceed a total of 5 doses.
4. The manufacturers suggest 10-40 units of syntocinon be added to 1000 cc of 5% Dextrose to run at a rate sufficient to control uterine atony.
5. If no response is obtained, prostaglandin can be administered.

VAGINAL DELIVERY AFTER CAESAREAN SECTION

Purpose: To follow the guidelines established in allowing labor and delivery following a previous Caesarean Section.

Contraindications:

Previous Classical Caesarean Section

Data Insufficient to Assess Risk, Individual management recommended:

1. Low vertical uterine scar
2. Fetal weight greater than 4,000 grams
3. Prior history of CPD

Policy: All patients meeting criteria for trial of labor will be monitored per stated guidelines.

Guidelines:

1. The woman and her physician should fully discuss the concept of a vaginal birth early in the prenatal course. Unless contraindications are present, vaginal birth should be encouraged.
2. The patient should be thoroughly counseled and informed of the risk and benefit of Vaginal Delivery after Caesarean Section.
3. Normal activity should be encouraged during the latent phase of labor. Electronic fetal monitoring is recommended throughout labor, both of fetal heart rate and uterine activity.
4. It is anticipated that the anesthesiologist, obstetrician and pediatrician will be available to perform a Caesarean delivery within 30 minutes from the time of decision until the procedure is begun. The Center for Birth personnel will be utilized whenever possible, otherwise the surgical suite personnel will be utilized.

5. The use of Syntocinon for augmentation in labor is at the direction of the attending physician.
6. There is no evidence that epidural anesthesia is contraindicated in patients with previous Caesarean sections.
7. Patients for trial of labor will be treated as any other laboring patient with regards to admission, blood work, I.V., etc. The physicians availability will remain the same as for any other labor patient on Syntocinon.

Criteria:

1. The concept of routine repeat Caesarean births should be replaced by a specific indication of a subsequent vaginal delivery, and in the absence of a contraindication, a woman with one previous Caesarean delivery with a low transverse incision should be counseled and encouraged to attempt labor in her current pregnancy.
2. In circumstances in which specific data on risks are lacking, the question of whether to allow a trial of labor must be assessed on an individual basis.
3. A previous classical uterine incision is a contraindication to labor.
4. Professional and institutional resources must have the capacity to respond to acute intrapartum obstetric emergencies, such as performing Caesarean delivery within 30 minutes from the time the decision is made until the surgical procedure is begun, as is standard for any obstetric patient in labor.
5. Normal activity should be encouraged during the latent phase of labor. There is no need for restriction to the labor bed before actual labor has begun.
6. A physician who is capable of evaluating labor and performing a Caesarean delivery should be readily available.

MAGNESIUM SULFATE FOR PREGNANCY INDUCED HYPERTENSION

Purpose: Intravenous administration of Magnesium Sulfate for the treatment of preeclampsia is initiated following assessment and order. It will be administered according To the following guidelines, and nursing care will be managed from a plan of care defined in the procedural component. This will be seen as the standard of care for the patient receiving Magnesium Sulfate for the management of Pregnancy Induced Hypertension (PIH).

Definition: Pregnancy Induced Hypertension

Mild Pre-eclampsia:

Blood pressure rise to 140/90, or an increase of 30 mm Hg systolic or 15 mm Hg diastolic over baseline values, is observed on two occasions six or more hours apart. Proteinuria (Urine dipstick 1+).

Supporting evidence includes:

- Edema of hands, face, feet, legs
- Weight gain of 5 kgs or more in one week
- Hyperreflexia 3+

Severe Pre-eclampsia:

Diastolic pressure of 110 mm Hg (2 occasions at least 6 hours apart while patient is on bedrest)
Proteinuria (Urine dipstick of > 2+)

Supporting evidence includes:

- Generalized edema; puffiness around eyes, 2+ pitting edema
- Oliguria < 25 cc/hr or < 400 cc in 24 hrs
- Cerebral or visual disturbances (headaches, blurred vision, scotomata)
- Epigastric pain
- Pulmonary edema (crackles noted on auscultation)
- Hyperreflexia > 3+
- Thrombocytopenia

- Procedure:**
1. Minimize all stimuli by controlling activity in patient's environment (limit visitors). Patient should be positioned in the lateral decubitus position, left or right side.
 2. Complete a baseline physical assessment according to unit policy within the first hour of admission.
 3. Data to be collected immediately:
 - a. BP
 - b. Deep tendon reflexes
 - c. Apical pulse and respiratory rate
 - d. FHR
 - e. Urine for protein screen by dipstick
 - f. Palpation of uterine tone and evidence of any tenderness
 - g. Evidence of vaginal leaking or bleeding
 - h. Edema
 - i. Level of consciousness
 - j. Breath sounds and respiratory rates
 4. History to be collected immediately: Presence of epigastric pain, visual disturbance, headache, pain over uterus or any contractions, how long edema has been evident, any nausea or vomiting
 5. Implement seizure precautions:
 - a. Emergency box at the bedside
 - b. Check O₂ and suction
 - c. Airway at bedside
 - d. Padded Bed rails
 6. Fetal monitoring, note:
 - a. Baseline
 - b. Presence of any periodic changes

7. Laboratory data to be collected:
 - a. CBC and platelets
 - b. Type and Screen

The physician may also elect to order the following, but it is not routine data to be collected:

- a. DIC screen (Coagulation profile)
 - b. SGPT, SGOT, Alkaline phosphatase, uric acid, electrolytes.
8. Educate the patient on the side effects she may experience while on MgSO_4 :
 - a. Hot flushed feeling
 - b. Sleepiness or drowsiness
 - c. Nausea
 - d. Headache
9. Observe for signs of toxic reaction to the MgSO_4 :
 - a. Shortness of breath. The patient should know it is not normal to experience shortness of breath.
 - b. Lethargy
 - c. Slurred speech
 - d. Confusion
10. Initiate I.V. therapy with mainline of 1000 cc Lactated Ringers at 125 cc/hr. **Total fluid should not exceed 150 cc/hr including MgSO_4 , infusion.**
11. Maintain accurate Input and Output and record hourly. Input and Output is totaled at 1400, 2200, and 0600 hrs. These must be cumulative so that any deficit in output is noted in TOTAL not just in 8 hour intervals.
12. Insert foley and attach to closed drainage for hourly output evaluation. **If < 25 cc/hr or a 4 hour total is < 100 cc, notify physician immediately.**

- 13. Baseline vital signs, DTR's (deep tendon reflexes) and FHR prior to infusion MgSO₄, loading dose: 4-6 gms in 100 cc of D5W. The pump is set at 200 cc/hr to meet the loading dose time of 20-30 minutes. **Remain with patient during loading dose infusion.** Vital signs at 5 minutes x 2, then q 10 minutes during loading dose. FHR noted in record q 15 minutes.**
- 14. Calcium Gluconate** is the antidote for MgSO₄, and must be at the bedside prior to initiating therapy with magnesium. It is given 1 gm IVP over 3 minutes. This is a 10% solution; give 10 cc. Because this binds the sites from the magnesium, the patient should reverse quickly. It is located in the Antidote box which should remain at the patient's bedside.
- * If the patient shows signs of toxicity, a stat magnesium level should be drawn and the physician notified immediately.**
- 15. Obtain MgSO₄, level 4 hours after therapy is initiated, then q 4-6 hours.**

Blood levels are reported as either mg/dl or meq/dL.

Therapeutic levels are: 5-8 mg/dL or 4-7 meq/L.

10 - 12 mg/dL Reflexes disappear.

15 - 17 mg/dL Respiratory rate slows to < 12 and arrest may occur

30 - 35 mg/dL Cardiac arrest

16. Nursing assessment and documentation include:

Vital signs, FHR, and uterine activity as for patient in labor or q 30 min x 1 hr then q 1 hr; postpartum patients on maintenance of 2 Gm or less of Magnesium Sulfate, vital signs will be taken q 2 hours if vital signs are stable Reflexes q 1 hr Input and Output q 1 hr (if < 30 cc/hr, notify physician)
Auscultate breath sounds q 4 hours

17. If signs of MgSO₄, toxicity occur:

SHORTAGE OF BREATH, confusion, decreased reflexes

Notify the physician, draw stat MgSO₄, levels, and administer Calcium Gluconate

18. Diet as ordered.

19. Loading Dose:

4-6 gm MgSO₄, in 100- 150 cc D5W over 30 minutes.

Remain with the patient during the loading dose infusion.

Pump setting:

4 gm/hr = 200 cc/hr

5 gm/hr = 250 cc/hr

6 gm/hr = 300 cc/hr

Vital signs 5 minutes x 2 after therapy is initiated, then q 10 minutes until loading dose is infused

DTR's following loading dose

FHR, then document q 15 minutes

20. Notify physician of any adverse response to the loading dose.

21. Maintenance therapy:

20 gm of MgSO_4 , in 500 cc D5 1/2 NS, infuse at 2-3 gms/hr.

I.V. pump control settings:

- 1 gm/hr = 25 cc/hr
- 2 gm/hr = 50 cc/hr
- 3 gm/hr = 75 cc/hr
- 4 gm/hr = 100 cc/hr

Signs of Toxicity:

- a. decreased output < 25 cc/hr
- b. reflexes I or absent (as compared to pre-mag baseline)
- c. change in level of consciousness, confusion, slurred speech
- d. respirations < 12/min
- e. sudden decrease in FHR

22. Obtain MgSO_4 level 4 hours after initiating therapy then q 4-6 hours, as indicated by physician.

MgSO_4 Ranges:

- a. 4-8 mg/dl Therapeutic level and should prevent seizures
- b. 10-12 mg/dl Reflexes disappear
- c. 5-17 mg/dl Respiratory rate slows to < 12 and arrest may occur
- d. 30-35 mg/dl Cardiac arrest

23. If patient experiences a seizure:

- a. **Airway** (if oral airway can be inserted without force, do so; otherwise, do not increase the trauma by attempting to force one into patient's mouth). Prevent maternal/fetal trauma as best as possible.
- b. **Suction** nasopharynx PRN.
- c. **Administer O₂**.
- d. **Note** the length of seizure and describe. Following seizure, assess fetus immediately and uterine activity. Notify physician immediately with description of episode and prepare for additional orders which may include anticonvulsive therapy.

PATIENT WITH ECLAMPTIC SEIZURES

Purpose: To safely monitor patients with eclamptic seizures to prevent further injury to patient and fetus.

Policy: All patients with eclamptic seizures will be taken care of according to the stated guidelines

Guidelines:

1. Never leave the patient alone.
2. Protect her from self-injury:
 - a. Gentle restraints; raise siderails.
 - b. Pad head and foot of bed by draping folded bath blankets.
 - c. Use appropriate size airway, if necessary.
3. Carefully complete observations and chart them:
 - a. Duration and character of convulsions.
 - b. Quality and rate of pulse and respirations.
 - c. Degree of cyanosis.
4. Keep NPO to guard against aspiration.
5. Elevate head to relieve dyspnea. Change position PRN.
6. Protect from stimuli:
 - a. Dim lights.
 - b. Do not shake bed.
 - c. Avoid sudden noises.
 - d. Use quiet tone of voice.

7. Check Fetal Heart Tone, BP, reflexes and clonus frequently.
8. Observe for signs of labor.
9. Keep careful record of Intake and Output; chart on proper form.
10. Keep Eclamptic Emergency Tray at bedside. If patient is not delivered, midwife can monitor the patient.

SEVERE PRE ECLAMPSIA VALIUM AND HYDRALAZINE

History, Physical Examination, Laboratory as per previous protocol

Severe Preeclampsia

- 40 mg Diazepam in 500 cc D5 W to run intravenously at the rate of 16 drops/minute
- For diastolic BP > 105, give Hydralazine 10 mg I.V. in 10 minutes
- 40 mg Hydralazine in 500 ml N/S to run intravenously at the rate of 16 drops per minute, to be increased or decreased to maintain the diastolic blood pressure below 100 mmHg.

Eclampsia

LOADING DOSE: 10 mg Diazepam I.V. slowly to be repeated every 5 - 10 minutes up to (4) doses until seizures cease .

MAINTENANCE DOSE: I.V. Diazepam and Hydralazine as above

.

Evaluate in 2-4 hours for method of delivery.

PREMATURE RUPTURE OF MEMBRANES (PROM)

Purpose: All patients with premature rupture of membranes should be monitored to prevent chorioamnionitis .

Supporting Data: Premature rupture of membranes is defined as the rupture of the amnion prior to labor, whether term or preterm.

Policy: Patient will be assessed and monitored per following guidelines.

Guidelines: On Presentation to the Labor and Delivery area :

1. The patient should be assessed per screening policy as to monitoring, vital signs, and history.
2. Patient may be checked at introitus only with nitrazine paper by nurse .
3. After assessing fetus, contractions and any obvious fluid noted the physician may be called about information obtained. A speculum exam may be performed.
4. Assemble for speculum exam :
 - a. Sterile speculum
 - b. Glass slides
 - c. Culture tubes x 2 (if requested)
 - d. Sterile cotton-tipped applicators
 - e. Flashlights
 - f. Nitrazine paper

5. After physician inserts speculum, he will use cotton-tips to obtain fluid and smear on slide. Then he will use 2 culture tubes to obtain specimen of amniotic fluids. Reposition patient after removal of speculum and make her comfortable.
6. Check results of tests :
 - a. Nitrazine turns purple or blue if positive for ROM. Nitrazine shows alkaline substance at a 7.0 pH or >. Amniotic fluid is alkaline but urine which is usually acidic, may also be alkaline. So only 75% accurate.
 - b. Slide will show ferning under microscope when positive for PROM. 100% accurate if allowed to dry completely.
 - c. Label and send culture tubes for C&S to lab. Write Beta Strep at bottom of lab culture form. (See boxes 1,2,3 at chapter end of antenatal page)

If patient is positive for PROM and has no labor, then patient is admitted and plan of care is completed.

7. Temperature, pulse, and respirations are taken on admission and every 2 hours until transferred to antenatal unit or as ordered by physician.
8. Fetal heart tones and blood pressure are taken on admission and as follows:
 - a. FHT is checked q 2 hr, then q4 hr or as ordered by the physician.
 - b. Blood pressure is taken q 4 hr, then b.i.d. or as ordered.
9. Arrange for ultrasound scanning to check for maturity, dating, abnormalities, placental localization and remaining amount of liquor.

- 10.** Mother is on complete bedrest unless otherwise ordered.
- 11.** Color and amount of vaginal drainage is assessed and documented on patient record every shift.
- 12.** Patient will be induced if she is over 34 weeks or if there is any sign of infection.
- 13.** Manage according to the following flow sheet.

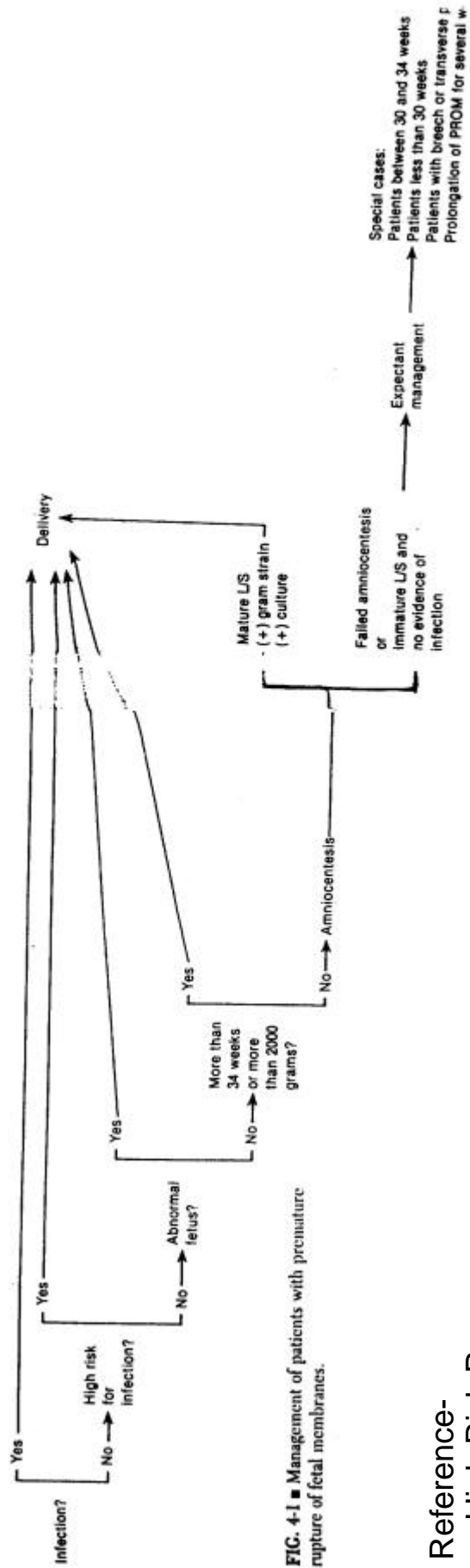


FIG. 4-1 ■ Management of patients with premature rupture of fetal membranes.

Reference-
High Risk Pregnancy
Fernando Arias

Some of the tests used for diagnosis of PROM

1. Visualization of amniotic fluid in the vagina
2. Nitrazine paper test
3. Fern test or arborization test
4. Ultrasound examination
5. Injection of fluorescein into the amniotic cavity (invasive)
6. Amnioscopy (invasive)
7. Diamine oxidase test

Gram's stain of amniotic fluid

1. Place one drop of centrifuged amniotic fluid on a glass slide.
Heat fix. Allow to cool
2. Flood slide with crystal violet. Allow to stain for 1 minutes
3. Wash with tap water
4. Flood slide with Iodine. Allow to stain 2 minutes
5. Wash with tap water
6. Decolorize slide with 95% alcohol (approximately 15 to 20 seconds)

Wright's stain of amniotic fluid

1. Place one drop of centrifuged amniotic fluid on a glass slide .
Heat fix. allow to cool
2. Floods slide with Wright's stain and leave it on the slide for 2 minutes
3. Add equal volume of buffer slide.
4. Mix layers of stain and buffer by gently blowing on slide (an iridescent sheen should appear in 5 - 10 seconds)
5. Allow buffer to remain on slide for approximately 3 minutes
6. Wash of stain - buffer mix with distilled water , wipe the back of the slide , and air dry
7. Staining time maybe modified to obtain a darker or lighter stain as described

PREMATURE ONSET OF LABOR (POL)

Purpose: To monitor patients with POL to prevent premature birth of infants.

Supporting Data: Premature labor is that which occurs before the 37 completed week of gestation (definition differs per physician), which could result in a birth of an infant weighing less than 2500 gm. Premature labor occurs in 10% of all pregnancies, resulting in 2/3 of all infant deaths:

33%	- >	(no definite cause)
30 - 50%	- >	after PROM
10%	- >	Iatrogenic prematurity (delivering too early by induction or C/S)

The importance is that if the infant delivered too early for necessary growth and development it could compromise its health.

Considerations:

1. Premature labor contractions may be difficult to distinguish from painful Braxton Hicks. Patient may complain of low back pain, abdominal pain, or pressure frequently with both.
2. Labor is difficult to stop if the cervix is more than 4 cm or ROM.
3. Maternal or fetal disorders may make a premature delivery more acceptable: i.e., eclampsia, abruptio, placenta, severe anomalies, RH Isoimmunization, fetal distress.

Policy: Patients with history or complaint of POL will be assessed and monitored per following guidelines.

Guidelines: On presentation to the unit the midwife will :

1. Start screening procedure per protocol including fetal monitoring of vital signs, history, and a sterile vaginal exam. Clean catch urine should be obtained at this time and sent for analysis, and C&S if ordered by physician as well as endocervical swab.
2. After 20 - 30 minute assessment, physician should be informed of progress.
3. If patient has contractions, but no dilation of the cervix, oral fluid hydration may be given while monitoring uterine activity and awaiting urine analysis results. Side lying position may help uterine relaxation. Vital signs q 1 hr.
4. If contractions persist and / or if initial speculum vaginal examination confirm cervical dilation, inform physician, start hydration of Ringers Lactate with # 18, and chemical tocolytics may be ordered. You may receive order for sedation [usual dose Demerol (Pethidine) 50 mg and Phenergan 25mg I.V. push slow] or to begin (Ritodrine) Yutopar therapy. Patient should be admitted at this time. Vital signs with FHR and contractions every 30 minutes until stable, then every hour. Patient will be on continuous fetal and uterine activity monitoring, if possible.

Disposition:

1. Patient may be discharged from unit if contractions stop, no dilation change and urine clear or Rx as in screening process.
2. After stabilization with tocolytics or hydration and sedation, patient may be transferred to antenatal unit

Vital signs on antenatal unit q 4 hours with FHR and contraction assessment x 4, then q shift .

RITODRINE FOR TOCOLYSIS

Purpose: RITODRINE is used for the inhibition of preterm labor following assessment by the physician. Criteria to be considered before initiation of RITODRINE therapy are : 1) gestational age, 2) estimated fetal weight, 3) presence of labor (regular uterine contractions at least 4 in 20 minutes or 8 in 60 minutes, lasting > 30 seconds, or cervical change, or cervix at least 2 cm in dilatation and 80% effaced) . Parenteral administration is frequently used to initiate tocolytic therapy in a newly diagnosed preterm labor patient. Absorption and thus onset of therapeutic effect is generally more rapid when the drug is given intravenously rather than orally. Nursing care for the patient undergoing tocolytic therapy is based on a plan of care to support inhibition of labor and optimize outcome.

Contraindication: Ritodrine is not generally utilized in the following cases:

- i) ruptured membranes
- ii) labor too advanced (cx > 4 cm)
- iii) medical or obstetrical complications:
(chorioamnionitis, severe pre-eclampsia, severe renal or cardiovascular disease, acute hemorrhage or active uterine/ vaginal bleeding, pulmonary hypertension, severe maternal hyperthyroidism, fetal demise or anomaly incompatible with life, severe IUGR, uncontrolled diabetes mellitus, or current treatment with another Beta - adrenergic drug).

Procedure: 1. A history should be documented on the record prior to initiation of any medication therapy, particularly for:

- * Diabetes
- * Hypertension
- * Cardiac (murmurs)
- * Lung (TB, asthma)
- * Neuro (migraines, seizures)
- * STDs/cold sores
- * Hepatitis
- * HIV
- * Genetic/ congenital anomalies
- * Multiple births
- * Renal (UTIs)
- * Previous hospitalizations/surgeries
- * Abnormal bleeding
- * Cancer
- * Blood Transfusions
- * Tattoos
- * Anemia
- * Mental Health Problems

2. Physical assessment prior to therapy includes:

- * Vital signs
- * Presence and location of non-dependent edema
- * Bilateral breath sound, and apical pulse
- * (deep tendon reflexes)

Uterine activity and fetal heart rate notation:

- * frequency and duration of contractions
- * heart rate baseline, long term variability and note any evidence of periodic changes.

3. Instruct the patient regarding the side effects that she may experience when tocolytic therapy is initiated:

- * nervousness
- * palpitations and sweating
- * tachycardia
- * nausea and vomiting
- * flush

4. Obtain baseline lab data: (if the patient has not previously been on Ritodrine):

- * CBC
- * Serum electrolytes
- * Blood sugar
- * UA (clean catch)
- * Fern test
- * Endocervical cultures and sensitivity

5. Report any abnormal findings to the physician.

6. Ritodrine dosage and administration

(SOLUTION 5 ML AMPOULES CONTAINING 10mg/ml) 5 ml RITODRINE in 1000 CC 5% Dextrose liquid infusion 1ml equals 16 drops

* Infusion rate

- First 10 min. 1 ml/min = 0.05 mg (50 mcg) / min
- Continue to increase as follows:

* Next 10 min. 2ml/min = 0.1 mg (100 mcg) / min.
= 32 drops/min

* Next 10 min. 3ml/min = 0.15 mg (150 mcg) / min.
= 48 drops/min

* Next 10 min. 4ml/min = 0.20 mg (200 mcg) / min.
= 64 drops/min

Continue to increase rate of infusion at the above rate until control is obtained or the maternal

heart rate exceeds 120 beats / min. Fluid chart must be done.

* Note: The effective dosage usually lies between 0.15mg/min and 0.35 mg/min.

Intramuscular injection is given in case I.V. infusion cannot be provided: 10 mg I.M. every 4-6 hours and continue for 12-48 hours after contractions cease.

Maintenance Treatment

Oral therapy should be initiated 12-18 hours after cessation of contractions and should be started 30-60 min. before termination of the parenteral therapy with: 1-2 (10mg) tablets every 6 hours with a maximum daily dose 80-120 mg equally divided.

* If oral doses are to follow, a physician's order should include :

- * Time of initial oral dose
- * Amount and frequency of oral doses

7. Assess vital signs\, FH Rate, and uterine activity prior to each of the doses.

When initial doses completed, nursing database includes:

- * Vital signs q 30 minutes x 2 or if patient complains of faintness or chest pain.
- * Lung auscultation q 2 hrs x 2, then q 4 hrs or if patient complains of difficulty of breathing.

8. Notify the senior physician if :

- a. Maternal pulse greater than 120
- b. FHR greater than 180
- c. Non-Reassuring Fetal Heart Rate pattern
- d. Progression of cervical dilation
- e. Maternal cardiac arrhythmia
- f. Signs of pulmonary edema
- g. Chest pain
- h. Widening of her pulse pressure
- i. Shortness of breath

9. Frequently the first dose of orally administered Ritodrine will be given at the same time as the final I.V. dose of the drug.

Other therapeutic modalities of treatment can be used like the following though ritodrine is the drug of choice .

- Beta mimetic agents. (Ventolin)
- Progesterone 17 alpha hydroxy progesterone caproate (delalutin) 250 mg every week
- Diazoxide (Hyperstat) (see box No. 9:1)
- Ethanol (see box No. 9:2)
- Terbutalin (see box No. 9:3)

Box No. : 9:1

Diazoxide for pre term labor

Preparation

Add 1 ampule of diazoxide (hyperstat) containing 300 mg to 250 ml of 0.5 N saline solution.

This gives a solution containing approximately 1.1 mg of diazoxide per milliliter

Initial Dose

Give the diazoxide via piggyback with a Harvard or IVAC pump, at a rate of 6 to 7 ml/minute for a 60 Kg patient (0.125 mg/Kg and per minute)

Box No. : 9:2

Ethanol for pre term labor

Preparation

Add 100 ml of 100% ethyl alcohol to 900 ml of D5W, or add 50 ml of 100% ethyl alcohol to 900 ml of 5% alcohol in D5W

Loading Dose

Administer 15 ml /Kg over the first 2 hours. For a 60 Kg mother this means 450 ml/hour for 2 hours

Maintenance Dose

Give 1.5 ml/Kg and per hour. For a 60 Kg mother this represents 90 ml/hour. This infusion should be maintained for 6 hours after the contractions have stopped, and then the patient should be gradually weaned off. The total length of the treatment should not exceed 12 hours.

Reloading Dose

If contractions recur within 10 hours of discontinuation of the alcohol infusion, the repeat initial dose should be 10% of the original dose times the number of hours from discontinuation:

Box No. : 9:3**Use of terbutaline in the treatment of pre term labor****Preparation of solution**

Dissolve 5 ampules of terbutaline (5mg) in 500 ml of ringers lactate solution. This preparation contains 10 mg of terbutaline per milliliter

Continuous Intravenous Infusion

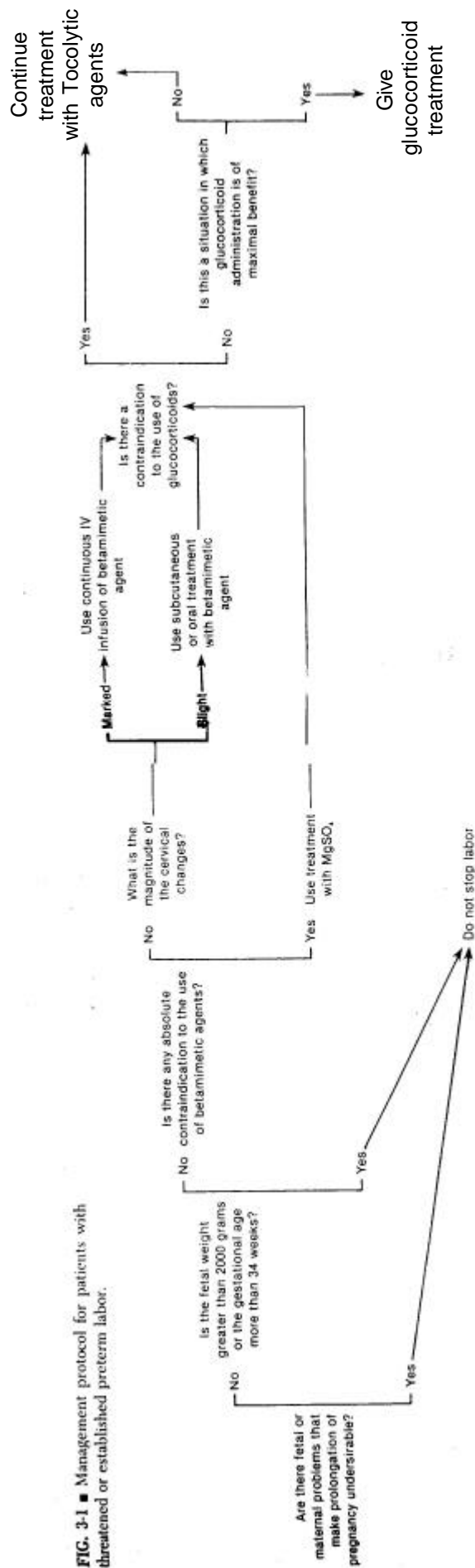
Using a Harvard pump, start I.V. infusion at a rate of 5mg/ minute (0.5 ml/minute; 30 ml/hour). Increase every 10 minute by 5 mg/minute (0.17ml/min 10.2 ml/hour) until a rate of 15mg/minute (1.5 ml/minute; 90 ml/hour) is reached. If contractions have not disappeared with this dose, a double strength solution (5mg in 250 ml of ringers lactate solution) should be prepared to avoid excessive intravenous fluid administration. Further increases should continue until contractions disappear, toxicity appears, maternal pulse rate exceeds 120 beats / minutes, or a dose of 30 mg / minute is reached. Once an adequate dose is reached, it should be maintained for 12 hours after the contractions stop. Do not taper down before switching to oral or subcutaneous treatment.

Subcutaneous Treatment

Discontinue the infusion of terbutaline I.V., and 15 minutes later give 250 mg subcutaneously. Continue giving the same amount every 3 to 4 hours as necessary to keep the pulse rate between 100 and 120 beats/ minutes.

Oral Treatment

Give a 5mg tablet of terbutaline, and 30 minutes later discontinue the intravenous or sub- cutaneous administration. Give the same dosage every 4 hours for the first 24 hours as long as the pulse rate does not exceed 120 beats/minute. Then adjust the dosage to 2.5 mg every 3 to 6 hours depending on the patient's response to therapy.



Reference-
High Risk Pregnancy
Fernando Arias

INTRAPARTUM PROPHYLAXIS FOR GBS PREVENTION (GROUP B STREP)

1. Intravenous Crystalline Penicillin G (5million units initially and then 2.5 million units every 4 hours) until delivery after test dose.

OR

2. Intravenous Ampicillin (2 g. initially and then 1 g. every 4 hours) until delivery.
3. In women allergic to Penicillin, Clindamycin or Erythromycin may be given.

ADMINISTRATION OF GLUCOCORTICOUDS FOR PRE-TERM LABOR

Statement

Glucocorticoids administered to the mother between 27-33 weeks of gestation have been reported to reduce the incidence of neonatal respiratory distress.

Protocol

Betamethasone, 12mg IM given twice 24 hours apart. Usually repeated seven (7) days as long as pre-term delivery seems likely.

Other Options

Dexamethasone 5 mg given IM twice daily to totalling 4 doses, or Hydrocortisone, 500 mg given IM every 6 hours for a total of 4 doses.

These doses are usually repeated every 7 days as long as pre- term delivery seems likely.

Glucocorticoids for fetal lung surfactant induction in preterm labor

INITIAL DOSE

Dexamethasone 12 mg intramuscularly in two consecutive dosages 24 hours apart, or Celestone (commercial product containing 6 mg betamethasone phosphate and 6 mg betamethasone acetate per milliliter), 12 mg intramuscularly in two consecutive dosages 24 hours apart.

REPEATED DOSE

Dexamethasone 12 mg intramuscularly every week after initial treatment, or Celestone 12 mg intramuscularly every week after the initial treatment.

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POSTPARTUM

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IMMEDIATE POSTPARTUM

A. Vaginal Delivery

1. As soon as the mother is adequately recovered, care is assumed by the assigned nurse.
2. Vital signs and blood pressure are taken and recorded per physician's orders.
3. Assessment of mother's condition (e.g., level and tone of the fundus, color and amount of lochia, appearance of perineum and rectal area, ability to void, presence of intravenous fluids, general alertness, and level of discomfort) is done and documented.
4. Mother is given perineal care. Side rails are put in an up position.
5. Mother is instructed that it is very important to call the nurse for help before getting out of bed for the first time.

B. Caesarean Delivery

1. As soon as the mother is adequately recovered, she is transported by stretcher to her assigned room.
2. A nurse admits the patient and orients her to her new surroundings.
3. Vital signs are taken and recorded per physician's order. Side rails are put in up position.
4. Assessment of mother's condition (e.g., level and tone of fundus, color and amount of lochia, appearance of surgical dressing, color and concentration of urine in foley bag, presence of intravenous fluid, general alertness, and level of discomfort) is done and documented.

POSTPARTUM CARE OF THE MOTHER

Purpose: All post delivery mothers will receive adequate and safe care during their stay in the hospital, usually 24 hours.

Policy: All nursing personnel and counselors will follow the written guidelines when caring for the mother.

POSTPARTUM CARE

During this period, attention should be given to both mother and the newborn. The mother and newborn are normally kept in the hospital for 24 hours.

I. CARE OF THE MOTHER

- a. Size and involution of the uterus
- b. Care of the perineum
- c. Detect postpartum complications and treat them
- d. Care of the breasts and nipples

II. CARE OF THE NEWBORN

- a. Circumcision
- b. Cleaning of the skin
- c. Care of the umbilical cord
- d. Care of the eyes
- e. Detect any complications

III. COUNSELING AND EDUCATION

- a. Breastfeeding
- b. Bottle feeding (if breast feeding not advised).
- c. Spacing of children (methods available)
- d. Importance of the fortieth day visit to the CPP clinics

DAILY POSTPARTUM CARE

A. Bathing:

1. Check daily assignment sheet to determine type of care required by each patient.
2. The mother may take her own sponge bath or shower. If she is unable to do either, a bed bath is given
3. Procedure for morning care:
 - a. Bedbaths are given to those mothers first day, post operative, C-Section.
 - b. Give perineal care as outlined under "B".
 - c. Every mother should wear a good supporting brassiere unless physician orders some other type of support.
 - d. Breast pads are supplied as needed.
 - e. Help the mother to put on a clean gown and perineal pad.
 - f. Linen is changed as necessary.
 - g. Leave the mother comfortable and the room in order

B. Perineum:

1. Perineal care for ambulatory mothers using maternity care kit:
 - a. Nurse should always wear new gloves before giving perineal care for each patient.
 - b. Mother should be taught how to care for herself as soon as she gets up to use the bathroom.

- c. Instructions for mother:
 - 1. Remove soiled pad and discard.
 - 2. Sit on toilet and rinse with warm water after voiding and / or having a bowel movement.
 - 3. Dry with wipe - from front to back. Pat gently.
 - 4. Apply pad in usual manner without touching inside of pad in order to maintain sterility.
 - 5. Thoroughly wash hands before and following perineal care.
- d. Bedrest mothers:
 - 1. Each time mother uses the bedpan, she will have perineal care.
 - 2. Cleanse with water. Wipe gently from front to back.
 - 3. Apply pad from front to back.
 - 4. Wrap soiled pad and discard in the wastebasket.
 - 5. If mother has handled soiled pads, assist her as necessary in cleansing her hands.

C. Procedures for Obstetrical Assessment of Mothers:

All mothers are assessed each morning and evening for the following: (Notations and observations are charted).

1. Breasts:

- a. Nursing:
 - 1. Soft
 - 2. Filling
 - 3. Full or engorged - nursing usually relieves this condition
 - 4. Lactating - milk usually comes in around the third day
- b. Non - Nursing:
 - 1. Soft
 - 2. Filling
 - 3. Full or engorged - Application of tight fitting bra or breast binder with ice packs and analgesia (e.g., Paracetamol 500 mg, 2 tablets) prn for several days until breasts soften and become more comfortable.

2. Fundus:

- a. Normal position is at midline of abdomen. If it is off to one side, it may indicate bleeding or a full bladder.
- b. Height following delivery is usually at or slightly below level of umbilicus and it should descend at the rate of about one (1) centimeter daily. Use fingertips to locate the top of uterus.
- c. Fundus should be felt and contracted. If flabby, massage gently until uterus becomes firm. Never massage a firm fundus, as this may lead to muscle relaxation.

3. Lochia:

- a. Type
 - 1. Rubra - bright red; lasts 3-4 days
 - 2. Serosa - brownish red; serous like; lasts from about the 5th- 10th day
 - 3. Alba- yellowish white; lasts from 10th- 20th day
- b. Amount
 - 1. is more heavier in multiparas
 - 2. should be reported if profuse
- c. Odor
 - Report immediately if any foul odor is detected as this may indicate presence of infection.

4. Perineum and Rectal Area:

- a. Intact
- b. Episiotomy - note condition
- c. Check for hematoma
- d. Check for hemorrhoids- treat with Anusol H.C.Cream and Tucks
- e. Ice bag to perineum prn. Sitz baths as ordered by the physician

5. Emotional Attitudes:

- a. Cheerful
- b. Depressed
- c. Excited
- d. Upset
- e. Attitude toward baby, husband, and visitors
- f. In case of stillborn, the mother should be placed away from the mother / baby area and given all the support.

D. Elimination:

1. Care of the bladder:

- a. Every nursing measure should be employed to encourage mother to void. After voiding, the mother's abdomen is palpated to determine whether bladder is emptied.
- b. If mother is unable to void or completely empty her bladder and her bladder appears to be full, she should be catheterized prn. If unable to void after second catheterization, insert foley.
- c. Report to doctor any complaint by a patient of frequency, burning upon urination, chills, etc., as this may indicate presence of a urinary tract infection.
- d. Mothers with indwelling catheters should routinely be put on Intake and Output. Foley care is given b.i.d.
- e. The first three (3) voidings after delivery are assessed for sufficient quantity. After removal of a foley catheter, voidings are measured to insure adequate output.

2. Care of Bowels:

- a. Laxatives are usually ordered for all patients until they have a bowel movement
- b. Enemas are offered on discharge day if the patient has not had a bowel movement. Enemas are not given to patient with fourth degree repair or "nothing per rectum" without specific order from the physician.

E. Patient Education

1. Nurse or counselor should attempt to learn the extent of the mother's knowledge concerning care of herself and her baby, and should use every opportunity to teach the patient in the areas in which she is or feels inadequate.
2. Prior to discharge, each new mother will be congratulated on her new baby, the instructions received reinforced and mother reminded to visit the CPP Center for any complications, The fortieth day postpartum visit highlighted and services that are available are promoted (Well baby Care, Postpartum Care, Family Planning).
3. Mothers will be given a booklet on maternal and child health that answers basic questions about breastfeeding and infant care, family planning and postpartum visits.
4. While still in the hospital, the mother will be counseled regarding birth spacing for at least two years. Birth spacing is vital for maternal health and child survival.
5. Family planning should start while the mother is breastfeeding and should be selected with breastfeeding in mind. Mothers should be helped to breastfeed successfully.
 - a. Lactational Amenorrhea Method (LAM) is a highly effective introductory family planning method for breastfeeding women. It provides natural protection against pregnancy for up to 6 months after birth and encourages the timely introduction of complimentary methods of birth spacing during breastfeeding.
 - b. Mothers who have chosen to have an IUD inserted after delivery of the placenta are counseled to return on the fortieth day visit to have the IUD checked.

- c. Other family planning methods are also explained.
 - i. Non-hormonal methods: (1st choice for breastfeeding women) LAM, condom, diaphragm, spermicides, IUD, vasectomy, tubal ligation.
 - ii. Progestin only methods: (2nd choice for breastfeeding women) mini-pills, injectables, implants.
 - iii. Combined oral contraceptives (not to be used in the first 3 weeks after delivery) (for non-breastfeeding mothers).
 - iv. If the mother is not breastfeeding and desires child spacing, an injection of Depo-Provera is given before leaving the hospital. This will protect against pregnancy until the six-week check up.
 - v. An IUD might be inserted within 48 hours after delivery (Immediate postpartum) by a trained provider, if the mother has chosen this method.

F. Rh-Antibody Screening

1. Check the mother's prenatal record for blood type and Rh. If not available, a blood sample will be requested to determine these at the discretion of the physician.
2. Infants of all Rh negative mothers have a blood specimen obtained at the time of delivery to determine their blood type and Rh.
3. If a mother is Rh negative or has a positive direct Coombs test or Du, a request slip marked "Rh-Antibody" is completed and sent to the laboratory. The laboratory further screens the blood samples of both the mother and the infant and will determine whether or not the mother is eligible to receive RhoGam.
4. A physician's order is necessary to administer RhoGam.
5. RhoGam is given IM (ideally within 72 hours but may be given up to 9 days of mother's delivery).
6. Multiple doses may be administered at the discretion of the physician.

G. Postpartum Rubella Vaccination

1. Check mother's prenatal record or clinic chart for Rubella Titer. If not available, a blood sample to determine Rubella Titer will be requested at the discretion of the physician.
2. Rubella Vaccine can be only administered with a physician's order.

CARE OF THE NEWBORN

Statement:

Initial physical assessment must be done by a pediatrician. All normal newborns are sent to the post-natal unit.

Examination of Newborn:

1. The APGAR score is noted upon examination.
2. Check the infant's identification bracelet with his chart: mother's name - first and last, hospital number, doctor, time and date of birth, sex, and baby tag number.
3. Weigh the baby and record on chart and birth slips. Measure length, head circumference, and chest circumference, and record on appropriate charts.
4. Perform clinical estimation of gestational age and chart on appropriate graph.

- 5** Check the Labor and Delivery Sheet for the following information :
- a. type of delivery
 - b. date and time of delivery
 - c. sex of child
 - d. treatment given to child in Delivery Room
 - e. number of hours that membranes have been ruptured (notify doctor if this has been 24 hours or over)
 - f. mother's name and hospital number
 - g. baby's tag number
 - h. condition of baby
 - i. APGAR SCORE
 - j. check footprint record and sign
 - k. check maternal history
 - l.
 - B screen results, presence of fetal anomalies, and exposure to Group B streptococci or communicable diseases.
- 6.** All newborn infants are placed under the radiant warmer and must have measurements of heart and respiratory rates, and notation of color, adequacy of peripheral circulation, type of respiration, state of consciousness (lethargy, irritability, twitching) every hour until four hours of age or until stabilized.
- 7.** The infant's temperature will be checked q 1 hour x 2. An initial rectal temperature (to detect patency of the rectum).
- 8.** Insert NG tube to Rule out congenital anomalies.
- 9.** The number of umbilical vessels should be counted and recorded (three are normal).

- 10.** A single parenteral dose of water soluble Vitamin K1 preparation will be given immediately after delivery (Full term 1mgPreterm 5mg).
- 11.** After stabilization of vital signs (2 consecutive normal) and temperature, a warm bath with mild soap will be given to infants.
- 12.** The baby will be admitted to Neonatal Intensive Care Unit if any deviation from normal is detected.
- 13.** Gloves will be worn by care giver for all contacts until first bath is given.
- 14.** All blood work will be done in the treatment room.
- 15.** Discharge planning is made. Relevant information is recorded in Maternal Child Health Book.

DOCUMENTATION

Purpose: Documentation of newborn care.

Policy:

1. The character and number of stools is recorded in the notes as they are observed.
2. The weight of the infant is recorded in grams on the worksheet and Kardex where it is recorded on the weight sheet.
3. At the end of each shift, stools and voidings are recorded on the infants administered, these are recorded, e.g., circumcision, injections. Notes are recorded on all babies whose mother has been discharged.
4. Any pertinent information such as difficulty in breathing, color change, regurgitations, etc., should be recorded immediately.
5. All notes should be dated, timed, written clearly, concisely, and thoroughly, and signed by the person who wrote the note.
6. Notes are to be written on all babies with documentation of routine checking.
7. Documentation of patient teaching.
8. Discharge Summary Form.

EARLY MOTHER/BABY NURSING GUIDELINES

Purpose: To provide guidelines for early mother/baby rooming in.

evaluation in
the nursery at the discretion of the charge nurse.

Policy: The attending physician will be notified of any of the following criteria for the infant before rooming-in can be implemented:

1. Weight less than 2500 grams.
2. Gestation less than 36 weeks.
3. Congenital anomalies.
4. Evidence of birth trauma.
5. Cyanosis
6. Respiratory rate over 60 lasting longer than one hour.
7. Respiratory grunt audible.
8. Respiratory grunt audible with a stethoscope.
9. Heart rate over 160 or under 100 lasting longer than one hour.
10. Irregular cardiac rhythm.
11. Distended abdomen (abnormal).
12. Depressed-flaccid, hypotonic.
13. Asphyxia:
 - a. APGAR score under 7 @ 5 minutes.
 - b. Infant requiring intubation in delivery room.

- 14.** Hypoglycemia indicated by dextrastix.
- 15.** Jitteriness (Hypo Thermia or Hyper Thermia).
- 16.** Jaundice in first 24 hours.
- 17.** Neonatal blood loss.
- 18.** Suspected sepsis - PROM over 24 hours.
- 19.** Maternal infection - Amnionitis in mother.
- 20.** Infant of diabetic mother.
- 21.** Infant of mother taking hazardous drugs.
- 22.**
nurse who will notify obstetrician if she feels mother is not alert.

The infant will remain under the radiant warmer if rooming-in is begun in the first 4 room.

SKIN CARE FOR THE NEWBORN

Purpose: To state skin care of the newborn according to Guidelines for Perinatal Care.

Equipment: Box Softnet tissues, soap, warm tap water
One shirt
Diapers
One Blanket
Quilted pad

Procedure:

1. Cleansing of the newly born infant should be delayed until the first bath.
2. Softnets (not gauze) soaked in warm water are used to remove the blood from the face and head, and meconium from the perianal area. As an alternative, a mild non-medicated soap can be used with careful water rinsing. Head may be shampooed with liquid soap using a soft brush with water rinsing.
3. The remainder of the skin should be untouched unless grossly soiled. There is evidence to indicate the vernix caseose may serve as a protective function, and some evidence to indicate it has no effect, but no evidence to indicate it is harmful.
4. For the remainder of the perianal regions should be cleansed with water and cotton sponges. As an alternative, a mild soap with water rinsing may be used as required at diaper changes and more often if indicated.

UMBILICAL AND CIRCUMCISION CARE

- I. **Cord care** - The most important and basic aspect of cord care is to keep the cord clean. The cord may be cleaned with water or saline to which methods he would like you to use. The cord should be cleaned where it is attached at the base by gently separating the skin from the cord. It should be kept dry.
- II. **Circumcision Care** - Vaseline is placed on the penis for approximately 24 hours. Soap or harsh rubbing should not be used until the penis has healed. Until that time, water may be dripped over the penis and gently patted dry. During the healing process, the new skin should not be picked or washed off.
- III. **Uncircumcised Penis Care** - The uncircumcised penis is easy to care for. No special care is needed. Leave it alone. The body provides its own protection of the glans area because the foreskin is fused to it. **DO NOT** retract **the foreskin**. Separation will evolve over time. Separation will occur on its own anywhere from a few weeks to several years. Each child is different.

FEEDING: POLICY

Purpose: To provide nourishment / feeding to the newborn.

Policy: All healthy full-term babies should be fed within the first hour of age, unless there are different orders by the physician.

Mother may breastfeed in Delivery Room if she desires to.

BREASTFEEDING: INSTRUCTIONS FOR MOTHERS

Purpose: To provide nourishment when the infant is able to take liquids by mouth and when the mother chooses this method of feeding for her infant.

Statement: The mother should be offered the opportunity to breastfeed her newborn as soon after delivery as possible.

Policy:

- 1.
2. Check ID bands with mother
3. Have mother wash hands with soap and water and assume a safe, comfortable position.
4. Guide mother to help the newborn grasp the breast properly. Enough of the areola (at least 1.5 cm mouth to permit the tongue to stroke the areola over the collecting ducts against the hard palate in the act of sucking.
5. When awake, the newborn should be encouraged to feed frequently to stimulate milk production - may actually feed 12 - 14 times a day if healthy.
6. Alternate the side used to initiate the feeding and equalize the amount of time spent at each breast. Feedings are usually 3 - 4 minutes on each side. By the 2nd or 3rd day, a feeding may take 10 minutes or more on each side.
7. Under normal conditions bottle feeding should not be offered to breastfeeding mother. Formula or water supplements are not offered. Physician order is indicated.

8. Instruct mother to take infant from breast by compressing his/her chin to release suction then insert a finger in the corner of the
9. Burp at end of feeding.
10. Encourage mother to cuddle infant to promote a better mother/infant relationship.
11. Lactation counseling should be given by trained staff.
Clinical record -
 - a. Note any difficulties in feeding
 - b. Note voidings - infant should urinate at least 6 times a day.
 - c. Note stools - may have a small moist stool with any of the feedings.
 - d. Note time of feeding and manner that nursed (i.e., nursed well, poor, fair)

Contraindications To BreastFeeding - Maternal Illnesses.

- a. Mothers with active tuberculosis should not breastfeed.
- b. Mothers with HbsAg positive should not breastfeed.
- c. Mothers infected with HIV should be counseled not to breastfeed.
- d. Mothers with identified primary cytomegalovirus should not breastfeed during the acute phase of the illness.

DISCHARGE: POLICY

Purpose: Discharge planning forms are to be placed on infant charts for discharge planning when mother is admitted.

Policy:

1. Discharge planning is begun on admission. Interdisciplinary forms are placed on infant's record for discharge planner.
2. Breastfeeding brochures and instructions are given to mother prior to discharge.
3. Nutritional information is given to mother prior to discharge.
4. In the event the mother is HBsAg positive, the neonate should have received the Hepatitis B vaccine and the immunoglobulin. The importance of maintaining vaccination must be understood by the mother.
5. Follow-up newborn care instructions will be given to the mother as specified by the physician. Other specific instructions will be given by the physician or designated nurse.
6. Mother will verbalize understanding of all instructions given.
7. Relevant information is recorded on (MCHB).
8. Emphasis done on importance of Fortieth Postnatal Visit.

DISCHARGE: PROCEDURE

Purpose: Parents will receive adequate discharge planning, and education prior to discharge, and follow-up care is arranged.

Policy: All responsible personnel discharging the newborn will follow the discharge procedure

Procedure:

1. Be sure physician has examined infant before discharge.
2. bedside in the crib and dress.
- 3.
4. (mother may dress baby if she desires).
5. Newborn identification footprints are signed by the mother at the
6. Discharge Teaching and Discharge Summary form are completed.

POST ABORTION

The patient is kept 24 hours after the abortion to make sure:

1. There is no excessive bleeding.
2. There is no infection.

During this time, the patient is counseled about future pregnancies. Fertility resumes usually 2 weeks after a first trimester abortion and 4 weeks after a second trimester abortion.

Before discharging the woman from the hospital, counsel the woman about the risk of a repeat unwanted pregnancy and initiate a contraceptive of her choice. She should be counseled about STD, GTI, and HIV/AIDS.

Natural family planning methods are not recommended until a regular menstrual pattern starts. Women should not have intercourse until the bleeding stops.

Any modern method of contraception can be used.

Counseling should never be conducted during the abortion or when the woman is in emotional/physical distress.

SIX WEEKS POSTPARTUM CARE

The fortieth days is viewed by Muslims around the world as a special time for both mothers and newborns. This coincides with the six weeks that is recommended for a general check up following delivery.

I. CHECK UP OF THE MOTHER

- a. Complications
- b. Condition of the breasts
- c. Involution of the uterus, healing of the perineum
- d. GTI (Genital Tract Infections)
- e. Pap smear
- f. Hgb, Hct, urinalysis
- g. Health education

II. CHECK UP OF THE NEWBORN

- a. Growth and development
- b. Healing of the umbilicus
- c. Detection of malformations

III. COUNSELING FOR BIRTH SPACING

- a. Breastfeeding mothers
- b. Non-Breastfeeding mothers

IV. BOUNDING

Picture of newborn and family (if feasible)

SIX WEEKS CHECK UP AND AFTER

At the six weeks visit, mothers will receive comprehensive counseling about infant care, GTI, including HIV/AIDS and birth spacing options. Counselors will provide comprehensive counseling, and mothers will have the option of including their husbands or other relatives in the counseling. The counselor will ask questions to assess the client's unique particular needs, use appropriate audiovisual aids and encourage questions. Use of patient participation and partnership, review of patient understanding and reactions, and relating to the patient's attitudes and emotions about the subject improve the outcome of family planning methods.

If a mother is interested in obtaining a birth spacing method, the counselor will provide her with the necessary information and help her choose an appropriate birth spacing method. Patient involvement in the design of care helps promote greater effectiveness of family planning strategies. In Jordan, the breastfeeding rate is very high, so a suitable method should be provided for breastfeeding mothers. An appropriate method mix should be ensured.

While the client and her family are in the waiting area, a video presentation on health and benefits of birth spacing will be playing.

Child spacing of at least two years does the following:

- * Saves lives
- * Reduces mortality and morbidity of the mother and the child born after a long interval
- * Gives the mother time to renew nutrient stores

COMPLIMENTARY FAMILY PLANNING OPTIONS

BREASTFEEDING MOTHERS

1ST CHOICE:

- a. LAM
- b. Condoms, Diaphragm, Spermicides (prevent GTI & HIV)
- c. IUD
- d. Tubal Ligation, Vasectomy

2ND CHOICE:

- a. Mini-pills
- b. Injectables
- c. Implants

NON-BREASTFEEDING MOTHERS

- a. IUD
- b. Combined Oral Contraceptives (3 weeks after delivery)
- c. Progestin only (pills, injectables, implants)
- d. Condom, Diaphragm, Spermicides, Cervical Cap
- e. Tubal Ligation, Vasectomy

EXAMINATION OF THE INFANT

In some of the CPP Centers, both infant and mother are examined in the same room. Mothers will be able to keep their babies at their sides while receiving postpartum services.

The infants will be examined by a pediatrician for:

- Assessment of the general condition
- Detection for congenital anomalies
- Evaluation of growth and development
- Health education

All the above will be recorded in the manual for Maternal and Child File.

EXAMINATION OF THE MOTHER

After the infant, the mother will be seen by an Ob/Gyn.

1. History:

- a. Breastfeeding or bottle feeding
- b. Any menstrual periods, any abnormal bleeding
- c. Any complications (fever, discharge, breast or abdominal pain.)

2. Physical Examination:

- a. Blood pressure and weight
- b. Breast examination (redness, tenderness)
- c. Abdomen: pain or tenderness, C/S scar (if applicable), uterus should not be felt if involuted.
- d. Pelvic exam:
 - Perineum: any fistulae, healing
 - Cervix: Pap smear is taken, if not done in antenatal period
 - Uterus: size and shape
 - Adnexa: any masses

If the mother has chosen an IUD as a method of contraception, it will be inserted. If she has chosen an injectable, it will be administered. However, if the client has not chosen any method, the Ob/Gyn will discuss the various options of family planning methods and will leave it up to the client to choose the method.

A new appointment for next follow up visit will be given, to check for contraceptive method used, complete examination not done, provide contraceptive method if not chosen at first visit.

FOLLOW UP POSTPARTUM VISIT

Two weeks after the first postpartum visit, the follow-up postpartum visit is another opportunity to discuss birth spacing if the client has not yet selected a method. It is also an opportunity to discuss the method she has chosen, whether she is satisfied or has experienced any complications.

While in the waiting area, the clients will be shown a video about the importance of birth spacing

SIX WEEKS POSTPARTUM CARE OF THE MOTHER

History:

- Breastfeeding or bottle feeding
- Abnormal bleeding
- Last period
- Fever
- Abnormal vaginal discharge
- Breast or abdominal pain

SIX WEEKS POSTPARTUM CARE OF THE MOTHER

Physical Examination:

- Weight and blood pressure
- Breasts
- Abdomen (C/S scar if applicable)
- Pelvic examination:
 - Perineum
 - Cervix: Pap smear
 - Uterus
 - Adnexa

SIX WEEKS POSTPARTUM CARE OF THE MOTHER

Laboratory tests:

Hb, Hct
Urinalysis

SIX WEEKS POSTPARTUM CARE OF THE NEWBORN

- Assessment of the general condition
- Detection of congenital anomalies
- Evaluation of growth and development
- Health education for nutrition, hygiene and immunization.
- Refer the baby to MCH Center for follow up visits.

SIX WEEKS POSTPARTUM BIRTH SPACING

COUNSELING:

Client Participation
Choice of Proper Method
Breastfeeding
Non-Breastfeeding
Method Mix

SIX WEEKS POSTPARTUM BIRTH SPACING

ADVANTAGES:

- Saves Lives
- Reduces Mortality and Morbidity
- Gives the mother time to renew nutrient stores

SIX WEEKS POSTPARTUM BIRTH SPACING

BREASTFEEDING MOTHERS

First Choice:

- LAM
- Barrier Methods
- IUD
- Tubal Ligation
- Vasectomy

SIX WEEKS POSTPARTUM BIRTH SPACING

BREASTFEEDING MOTHERS

Second Choice:

- Mini Pills / Progestin Only Pills.
- Injectables
- Implants

SIX WEEKS POSTPARTUM BIRTH SPACING

NON-BREASTFEEDING

- IUD
- Combined Oral Contraceptives
- Progestins (Pills, Injectables, Implants)
- Barrier Methods
- Tubal Ligation
- Vasectomy

FOLLOW UP POSTARTUM VISIT

- Birth Spacing Revisited
- Child Immunization
- Monitoring of growth and development.

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FAMILY PLANNING

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INTRODUCTION

This section is only comprised of overheads on contraceptives. The text of the overheads is self-explanatory. Pathfinder International and other organizations have published extensively on family planning methods. It is recommended that the following publications be used for reference:

- A. Comprehensive Reproductive Health and Family Planning Training Curriculum (Pathfinder International).
- B. Recommendations for Updating Selected Practices in Contraceptive Use (USAID).
- C. Pocket Guide for Family Planning Service Provider (JHPIEGO).
- D. Improving Access to Quality Care in Family Planning: Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods (WHO).
- E. Institute for Reproductive Health).
- F. FHI.
- G. High Risk Pregnancy by Fernando Arias.



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BREASTFEEDING

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BREASTFEEDING AS A FAMILY PLANNING METHOD

The benefits of breastfeeding for infant health are universally recognized.

BREASTFEEDING AS A FAMILY PLANNING METHOD

The maximum birth spacing effect of breastfeeding is achieved when
amenorrheic
for six months postpartum.

LAM Criteria:

- Fully or nearly fully breastfeeding.
- Amenorrhoea.
- First six months postpartum.

BREASTFEEDING AS A FAMILY PLANNING METHOD

When the above conditions are fulfilled, breastfeeding provides more than 98% protection from pregnancy in the first six months.

BREASTFEEDING AS A FAMILY PLANNING METHOD

At six months, or if menses return or if breastfeeding ceases to be full or nearly full before the sixth month, the risk of pregnancy increases.

BREASTFEEDING AS A FAMILY PLANNING METHOD

When one of these events occurs, another family planning method should be adopted.

BREASTFEEDING AS A FAMILY PLANNING METHOD

Full or nearly full breastfeeding is associated with longer periods of lactational amenorrhea and infertility than partial breastfeeding.

BREASTFEEDING AS A FAMILY PLANNING METHOD

When additional foods are introduced to infant encourage women to continue breastfeeding frequently (day and night).

BREASTFEEDING AS A FAMILY PLANNING METHOD

Continued breastfeeding may still exert a substantial antifertility effect for a year or more.

BREASTFEEDING AS A FAMILY PLANNING METHOD

After the sixth month postpartum, when breastfeeding ceases to be full or nearly full, ovulation precedes the first menses.



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LACTATIONAL AMENORRHEA METHOD (LAM)

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LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

Begin breastfeeding as soon as possible after the child is born, preferably immediately after delivery.

LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

Breastfeed exclusively for the first six months.

LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

After 4 to 6 months, when supplemental foods are introduced to infant, breastfeeding should precede supplemental feedings. If supplements are given they should not exceed 15 daily intake (1 out of 7 feeds).

LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

Continue to breastfeed for at least two years.

LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

Breastfeed on demand day and night. Intervals between breastfeeds should not exceed four hours during the day and six hours during the night.

LACTATIONAL AMENORRHEA METHOD (LAM)
BREASTFEEDING FOR BIRTH SPACING

Continue to breastfeed, even if the mother or baby becomes ill.



Barrier

BARRIER METHODS

Barrier Methods

BARRIER METHODS TYPES

Condoms

a) Male:

- Latex.
- Plastic.

b) Female:

- Latex.
- Plastic.

Diaphragm

Spermicides (gel, foam, foaming tablet, film, sponge).

BARRIER METHODS MECHANISM OF ACTION

Preventing spermatozoa from reaching the upper female genital tract.

Mechanical: Condoms, Diaphragm, Cervical Cap.

Chemical: Spermicides.

BARRIER METHODS ADVANTAGES

Rare Local side effects.

No systemic interference.

Protection against venereal disease and cervical cancer and HIV.

No need for prescription (condom and spermicide.)

Minimal medical intervention (diaphragm.)

**BARRIER METHODS
SIDE EFFECTS**

Latex allergy: Non latex condoms available.

Chemical allergy.

**BARRIER METHODS
DISADVANTAGES**

Application related to intercourse.

ration.

Requires planning prior to intercourse.

Interferes with emotional state.

Need motivation.

Local irritation.

**BARRIER METHODS
INDICATIONS FOR TEMPORARY USE**

During Lactation.

Post-infected abortion.

When taking medication that interacts with and reduces the effects of the pill.

Investigation of a missing IUD string.

Post-vasectomy.

Pre-tubal ligation.

Investigation of gynecological problems.

BARRIER METHODS

1. Check the pack for expiry date, tears, change in color.
2. Do not use teeth or sharp objects to open pack.
3. Put the condom on the erect penis.
4. Hold on the condom so that the rolled rim is facing up.
5. Unroll the condom all the way to the base of the penis.
6. Wait until the vagina is well lubricated.
7. Do not use oil based lubricants. Use water soluble lubricants.
8. Leave empty space at the tip (pinch the tip as you roll it on.)
9. Withdraw the penis immediately after ejaculation, holding on to the rim of condom.
10. Dispose off condom properly after tying it.
11. Do not use a condom more than once.

BARRIER METHODS DIAPHRAGM

Fitting the diaphragm.

Vaginal Examination.

Fitting rings.

Types of diaphragm.

Placement checking.

BARRIER METHODS

Insertion: Just before 6 hrs. prior to intercourse.

Use with spermicide.

Leave it in place at least 6 to 8 hrs. after intercourse.

Wait at least 6 to 8 hrs. to douche.

Use a new application of spermicide for each additional intercourse.

Cleaning and storage.

Insertion and removal.

s position: squatting or with one foot on a chair.

Manual insertion or with an applicator.

Digital removal.

BARRIER METHODS

Inability to learn insertion technique.

Repeated urinary tract infections.

Full term delivery within the past 6 weeks.

Abnormalities in vaginal anatomy.

BARRIER METHODS

Genital prolapse.

Perineal lacerations.

Extreme uterine retroflexion.

Perineal insufficiency.

Cervico vaginal adhesences.

BARRIER METHODS SPER

Foaming tablets are inserted high into the vagina 3-10 minutes before intercourse.

One applicator full of foam should be inserted just before intercourse.

Insert the cream or jelly into the vagina with an applicator 2-3 min. before intercourse.

BARRIER METHODS

Repeat application every time another intercourse occurs, or if more than 2 hrs. have passed since first application.

Avoid vaginal douche up to 6 hrs. after vaginal intercourse.

BARRIER METHODS

Active Material in Spermicidals

1. Nonoxynol.
2. Octoxynol.
3. Menfegol.
4. Benzyl konium chloride BZK.



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ORAL CONTRACEPTIVES

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ORAL CONTRACEPTIVES COMPOSITION

ESTROGEN

ETHINYL ESTRADIOL (EE)
MESTRANOL

PROGESTIN

NORETHINDORNE
NORETHINDRONE ACETATE
ETHYNDIOL DIACETATE
NORGESTREL
LEVONORGESTREL
NORETHYNODREL
DESOGESTREL
GESTODENE
NOREGESTIMATE

ORAL CONTRACEPTIVES MECHANISMS OF ACTION

Suppress ovulation through inhibition of hypothalamic-pituitary axis.

Thicken cervical mucous (prevents sperm penetration.)

Change endometrium (making implantation less likely.)

Reduce sperm transport in upper genital tract (Fallopian tubes.)

How OCs Work

Mechanisms	COCs	POPs*
Primary	Inhibit ovulation	Thicken cervical mucus
Other	- thicken cervical mucus - reduce development of endometrium	- inhibit ovulation in ~60% of cycles - reduce development of endometrium - slow movement of ovum in tubes

* When POPs are used by breastfeeding women, lactation works synergistically with POPs to suppress ovulation more consistently and frequently.

ORAL CONTRACEPTIVES INDICATIONS

Couples needing birth control for birth spacing.

Nulliparous women.

Nonlactating postpartum women (combined oral contraceptives.)

Need for short or long-term reversible contraception.

ORAL CONTRACEPTIVES INDICATIONS

Need for postcoital birth control (emergency contraception.)

Immediate postabortion period.

Acne.

Heavy or painful menstrual periods.

Recurrent ovarian cysts.

Family history of ovarian cancer.

ORAL CONTRACEPTIVES SIDE EFFECTS

Not experienced by all users, not harmful, some may be unpleasant.

- Non Menstrual
 - Weight gain
 - Nausea
 - Dizziness
 - Acne
 - Breast tenderness
 - Headaches

- Mood changes
- Chloasma.
- Changes in libido
- Bleeding
 - Amenorrhoea
 - Break through bleeding

ORAL CONTRACEPTIVES INSTRUCTIONS FOR USERS

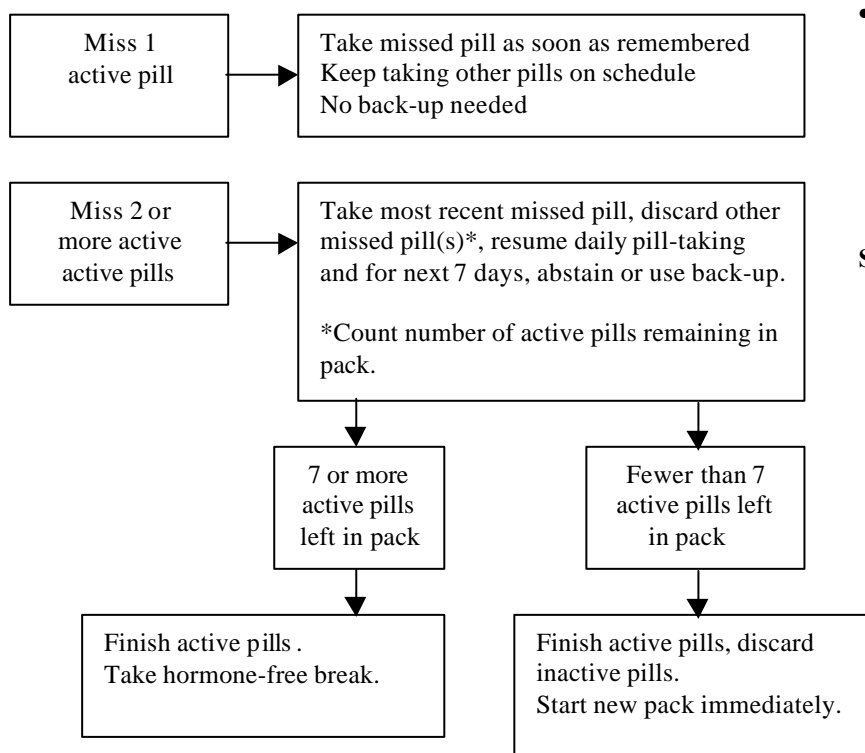
Combined Oral Contraceptives

How to Take COCs

Schedule

- take one pill each day
- 28
- 21

Missed Pill(s) Regimen



Initiating

- Anytime provider can be reasonably sure the woman is not pregnant.
- Preferably, first seven days of menstrual cycle.
- If after seventh day, use back-up method for seven days.
- Postpartum:
 - three weeks
 - months or till breastfeeding is discontinued.

Switching/Discontinuing

- Switch to another method or quit any time.
- Recommend finishing pill pack, although not necessary.
- If necessary, use back-up until new method becomes effective.
- Fertility returns rapidly.

COMPARED CONTRACEPTIVE EFFECTIVENESS

Method (1)	% of Woman Experiencing an Accidental Pregnancy Within the First Year of Use		% of Woman Continuing Use at One Year (4)
	Typical Use (2)	Perfect Use (3)	
Pill	3.00		72.00
Progestin Only		0.5	
Combined		0.1	
IUD			
Progesterone T	2.0	1.5	81
Copper T 380A	0.8	0.6	78
LNg 20	0.1	0.1	81
Depo-Provera	0.30	0.30	70.00
Norplant (6 Capsules)	0.09	0.09	85.00

ORAL CONTRACEPTIVES MAIN ADVANTAGES and STRENGTHS

1. Safe.
2. Ingestion unrelated to sexual activity.
3. 99% effective if used correctly and consistently.
4. Greater effectiveness.
5. Reversible, rapid return of fertility.
6. Correction of menstrual alterations.
7. Prevention against ovarian, endometrial and breast cancer.
8. Prevention against benign diseases of the breast.
9. Prevention against pelvic inflammatory disease.
10. Non clinical distribution possible.

ORAL CONTRACEPTIVES

MAIN DISADVANTAGES and WEAKNESSES

1. Incorrect use is common.
2. Require daily use.
3. Common side effects (serious complications very rare.)
4. Androgenic manifestation.
5. Breastfeeding (for combined oral contraceptives.)
6. No protections against STDs.

INTERACTIONS OF ORAL CONTRACEPTIVES WITH OTHER DRUGS

<u>COMMONLY USED OR PRESCRIBED DRUGS</u>	<u>ADVERSE EFFECTS</u>	<u>COMMENTS AND RECOMMENDATIONS</u>
Analgesics Acetaminophen (Tylenol, Paracetamol and others)	Possible decreased pain-relieving effect (increased drug excretion)	Monitor pain-relieving response.
Antibiotics * - Griseofulvin and Rifampin * No documented clinical effect or significance has been established for penicillins, tetracyclines, cephalosporins and other commonly used antibiotics. COCs or other hormonal method may be used and no backup method routinely necessary with these antibiotics	Decreased contraceptive effect, especially with low-dose COCs, <35 mg ethinyl estradiol (EE)	Help client choose another method or use higher estrogen pill (50 mg EE) or backup method (e.g., condoms). ⁷
Antidepressants (Elavil, Norpramin, Tofranil and others)	Possible increased antidepressant effect	Use COCs with caution, monitor BP.
Antihypertensives Methyldopa (Aldoclor, Aldomet and others)	Possible decreased antihypertensive effect	Use COCs with caution, monitor BP.
Antiseizure Barbiturates (Phenobarbital and others) Carbamazepine (Tegretol) Phenytoin (Dilantin) Primidone (Mysoline)	Decreased contraceptive effect, especially if lowest dose COC. Possible increased phenytoin effect	Help client choose another method or use higher estrogen pill (50 mg EE) or backup method (e.g., condoms). ⁷
Beta-blockers (Corgard, Inderal, Lopressor, Tenormin)	Possible increased beta-blocker effect	Monitor cardiovascular status.
Bronchodilators Theophylline (Bronkatabs, Marax, Primatene, Qibron Tedral, Theor-Dur and others)	Increased theophylline effect	Monitor for symptoms of theophylline overdose.
Hypoglycemics (Diabinese, Orinase, Tolbutamide, Tolinase)	Possible decreased hypoglycemic effect	Monitor blood glucose as for any diabetic patient.
Tranquilizers Benzodiazepine (Ativan, Librium, Serax, Valium, Xanax and others)	Possible increased or decreased tranquilizer effects including psychomotor impairment	Use with caution. Commonly prescribed dosages are unlikely to result in significant effects.

COMBINED ORAL CONTRACEPTIVES

TYPES OF PILLS

MONOPHASIC: All 21 active pills contain same amount of estrogen and progestin.

BIPHASIC: 2 different E/P combinations (10/11) of 21 active pills.

TRIPHASIC: 3 different E/P combinations (6/5/10) of 21 active pills.

COMBINED ORAL CONTRACEPTIVES

WHO Category 4
Women Who Should Not Use

COCs

Pregnant

Breastfeeding

(less than 6 weeks postpartum)

Smoke heavily and are over age 35

Greatly increased risk of cardiovascular disease

(BP 18+/110+; diabetes with vascular complications; history of deep vein thrombosis, blood clots in the lung, heart attack, stroke, severe headaches with focal neurologic symptoms)

Certain pre-existing conditions

(current breast cancer, benign liver tumors, liver cancer, active viral hepatitis)

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 3
Women Who Usually Should Not Use

COCs

Suspicious unexplained vaginal bleeding*

(until cause is evaluated)

* when occurring during COC use it is a category 2

Certain drug interactions

(specific antibiotics: rifampicin, griseofulvin
anticonvulsants: phenytoin, carbamazepine,
barbiturates, primidone)

Breastfeeding

(between 6 weeks and 6 months postpartum)

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 2
Women Who Can Generally Use

COCs

Over age 40

Smoke and are younger than 35 years

Diabetes

(none-vascular)

Sickle cell disease

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 1
Women Who Can Use Without Restriction

COCs

Menarche to 40 years

With or without children

Any weight including obese

Postpartum
(3 weeks, if not breastfeeding)

Immediately post-abortion

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

COMBINED ORAL CONTRACEPTIVES RISK SIGNS OF COC

ACHES

- A.** Abdominal Pain.
- B.** Chest Pain.
- C.** Headache.
- D.** Eye problem.
- E.** Severe leg pain.

Warning Signs of Possible Cardiovascular Disease Women who experience any of these signs/symptoms should stop using COCs, use a back-up method and return to the clinic for evaluation by a skilled provider.	
Symptom/Warning Sign	Possible Cause
Sharp pain or swelling in leg →	Inflamed leg vein or blood clot
Severe chest, arm, shoulder pain, shortness of breath →	Heart attack or blood clot
Severe headaches with vision problems →	Stroke or blood clot



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WHO ELIGIBILITY CRITERIA

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PROGESTIN-ONLY PILL

WHO Category 4
Women Who Should Not Use

POPs

Pregnant

Breast Cancer
(if developed during POP use)

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 3
Women Who Usually Should Not Use

POPs

Breastfeeding women
(less than 6 weeks postpartum)

Suspicious unexplained vaginal bleeding
(until cause has been evaluated)

Current breast cancer

Liver disease
(active viral hepatitis, severe cirrhosis, tumors)

Certain drug interactions
(specific antibiotics: rifampicin, griseofulvin
anticonvulsants: phenytoin, carbamazepine,
barbiturates, primidone)

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 2
Women Who Can Generally Use

POPs

Ischemic heart disease
(current and history of)

Stroke
(history of)

**Recurrent, severe headaches with focal
neurologic symptoms**

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Category 1
Women Who Can Use Without Restriction

POPs

Any age
(after age 16)

Gynecological problems
(uterine fibroids, STDs/PID/HIV)

Any weight including obese

Diseases
(benign breast disease, carriers of viral
hepatitis, thyroid disease, malaria, sickle cell
disease, or tuberculosis)

Source: WHO, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996

WHO Medical Eligibility Criteria for Initiating and Continuing Use of COCs and POPs

Classification	With Clinical Judgment	With Limited Clinical Judgment
1	Method used without restriction	Yes
2	Method generally used	Yes
3	Method usually not used	No
4	Method not to be used	No
I - Initiation		C - Continuation

Condition	COCs	POPs
STDs:		
a) Current or within 3 months (including purulent cervicitis)	1	1
b) Vaginitis without purulent cervicitis	1	1
c) Increased risk of STDs (e.g. multiple partners or partner who has multiple partners)	1	1
HIV/AIDS		
a) HIV-positive	1	1
b) High risk of HIV	1	1
c) AIDS	1	1
Breast Disease		
a) Undiagnosed mass	2	2
b) Benign breast disease	1	1
c) Family history of cancer	1	1
d) Cancer		I C
- current (developed or recurrent)	4	3 4
- past and no evidence of current disease for five years	3	3
Cervical Intraepithelial Neoplasia (CIN)	2	2
Cervical Cancer (awaiting treatment)	2	2
Cervical Ectropion	1	1
Endometrial, Ovarian Cancer	1	1
Biliary Tract Disease		
a) Symptomatic		
- treated by cholecystectomy	2	1
- medically treated	3	1
- current	3	1
b) Asymptomatic	2	1
History of Cholestasis		
a) Pregnancy-related	2	1
b) Past COC-related	3	2
Viral Hepatitis		
a) Active	4	3
b) Carrier	1	1
Cirrhosis		
a) Mild (compensated)	3	2
b) Severe (decompensated)	4	3
Liver Tumors		
a) Benign (adenoma)	4	3
b) Malignant (hepatoma)	4	3/4

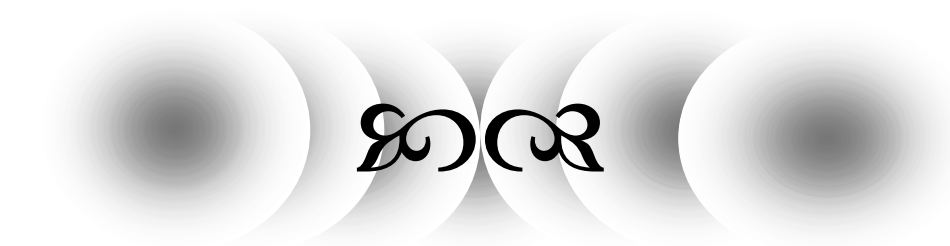
Condition	COCs	POPs
Uterine Fibroids	1	1
Past Ectopic Pregnancy	1	2
Obesity	1	1
Thyroid		
a) Simple goitre	1	1
b) Hyperthyroid	1	1
c) Hypothyroid	1	1
Thalassaemia	2	1
Trophoblast Disease		
a) Benign gestational trophoblastic disease	1	1
b) Malignant gestational trophoblastic disease	1	1
Sickle Cell Disease	2	1
Iron Deficiency Anaemia	1	1
Epilepsy	1	1
Schistosomiasis		
a) Uncomplicated	1	1
b) Fibrosis of the liver (if fibrosis is severe, see cirrhosis)	1	1
Malaria	1	1
Drug Interactions		
a) Commonly used drugs which affect liver enzymes:		
- antibiotics (rifampicin and griseofulvin)	3	3
- anticonvulsants (phenytoin, carbamazepine, barbiturates, primidone)	3	3
b) Other antibiotics (excluding rifampicin and griseofulvin)	1	1
Parity		
a) Nulliparous	1	1
b) Parous	1	1
Severe Dysmenorrhoea	1	1
Tuberculosis		
a) Non-pelvic	1	1
b) Known pelvic	1	1
Endometriosis	1	1
Benign Ovarian Tumors (including cysts)	1	1
Prior Pelvic Surgery (including C-section) (see also postpartum section)	1	1

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WHO Medical Eligibility Criteria for Initiating and Continuing Use of Combined Oral Contraceptives (COCs) and Progestin-Only Oral Contraceptives (POPs)

Classification	With Clinical Judgment	With Limited Clinical Judgment	Condition	COCs	POPs
1	Method used without restriction	Yes	Deep Venous Thrombosis (DVT)/ Pulmonary Embolism (PE)		
2	Method generally used	Yes	a) History of DVT/PE	4	1
3	Method usually not used	No	b) Current DVT/PE	4	1
4	Method not to be used	No	c) Major surgery		
I - Initiation C - Continuation			- with prolonged immobilization	4	1
			- without prolonged immobilization	2	1
			d) Minor surgery without immobilization	1	1
Condition	COCs	POPs	Superficial Venous Thrombosis		
Pregnancy	4	4	a) Varicose veins	1	1
Breastfeeding			b) Superficial thrombophlebitis	2	1
a) < 6 weeks postpartum	4	3	Current and History of Ischemic Heart Disease	4	I C
b) 6 weeks to 6 months (primarily breastfeeding)	3	1			2 3
c) ≥ 6 months postpartum	2	1	Stroke (history of cerebrovascular accident)	4	I C
Postpartum (non-breastfeeding women)					2 3
< 21 days	3	1	Known Hyperlipidaemias (screening is not necessary for safe use of contraceptive methods)	2/3*	2
≥ 21 days	1	1	* depending on severity of condition		
Postabortion			Valvular Heart Disease		
a) First trimester	1	1	a) Uncomplicated	2	1
b) Second trimester	1	1	b) Complicated (pulmonary hypertension, atrial fibrillation, history of subacute bacterial endocarditis)	4	1
c) Immediate post-septic abortion	1	1			
Age	< 40 = 1 ≥ 40 = 2	< 16 = 2 ≥ 16 = 1	Headaches		
Smoking			a) Mild	1	I C
a) Age < 35	2	1	b) Severe		
b) Age ≥ 35			- recurrent, including migraine, without focal neurologic symptoms	2	1 2
- light	3	1	- recurrent, including migraine, with focal neurologic symptoms	4	2 3
- heavy (> 20 cigarettes per day)	4	1	Vaginal Bleeding Patterns		
Essential Hypertension	I C		a) Irregular pattern - without heavy bleeding	1	I C
a) History of hypertension where blood pressure cannot be evaluated (excluding hypertension in pregnancy)	3 3	2	b) With heavy or prolonged bleeding (includes regular patterns)	1	2 2*
b) Blood pressure levels			* Category 3 if anaemia noted clinically. Unusually heavy bleeding should raise the suspicion of serious underlying condition.		
(i) 140-159/90-99	2/3* 2/3*	1	Unexplained Vaginal Bleeding (suspicious for serious condition) Before evaluation	I C	I C
* if blood pressure can be monitored periodically, then this situation is Category 2; if not, then it is Category 3.				3 2	3 2
(ii) 160-179/100-109	3/4 4	1	Pelvic Inflammatory Disease (PID) or PID Risk		
(iii) 180+/110+	4 4	2	a) Past PID (assuming no current risk factors of STDs)		
c) Vascular disease	4 4	2	- with subsequent pregnancy after past PID	1	1
			- without subsequent pregnancy	1	1
History of Pre-Eclampsia	1	1	b) PID-current or within the last 3 months	1	1
Diabetes					
a) History of gestational disease	1	1			
b) Non-vascular disease:					
- non-insulin dependent	2	2			
- insulin dependent	2	2			
c) Nephropathy/retinopathy/neuropathy	3/4	2			
d) Other vascular disease or diabetes of > 20 years' duration	3/4	2			

Source: World Health Organization, Medical Eligibility Criteria for Initiating and Continuing Use of Contraceptive Methods, 1996.



INTRAUTERINE DEVICES

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INTRAUTERINE DEVICES ADVANTAGES

Low incidence of side effects

Lack of systemic effects

Low cost

Easy insertion and removal

Excellent reversibility

Highly effective.

Unrelated to sexual act.

INTRAUTERINE DEVICES TYPES

* Medicated: Copper, Progesterone, Copper-silver, Levonorgestrel

* Unmedicated (Inert.):

Most available in Jordan: Copper T 380A (Tcu 380
span: 10 years.

INTRAUTERINE DEVICES MECHANISM OF ACTION

Transport of sperm and egg through the fallopian tube is altered, preventing fertilization.

Destruction of sperm and egg secondary to inflammatory changes in the uterus and secondary to copper.

Increased prostaglandin production.

Copper ions inhibit sperm transport in endocervical mucus and endometrial cavity

Thickening of cervical mucus (progtasert, levonorgestrel IUD)

Sterile inflammatory reaction

Foreign body reaction.

INTRAUTERINE DEVICES SELECTION OF PATIENTS

History	:	Any medical conditions (anemia, heart disease, etc.).
Physical examination	:	BP, weight, heart and lungs, breasts
Pelvic examination	:	Rule out pregnancy, tumors, PID, etc. (Screening for cervical cancer is recommended for optimal health care)

INTRAUTERINE DEVICES WOMEN WHO SHOULD NOT USE IUD

- Pregnancy.
- Between 48 hours to 4 weeks postpartum.
- Puerperal sepsis postpartum.
- Post septic abortion.
- Cervical cancer waiting treatment.
- P.I.D current, or within last three months.
- S.T.D current, or within last three months.
- Increased Risk for S.T.Ds.
- HIV / AID positive.
- AIDS.
- High Risk of HIV
- Trophoblast disease.
- Distorted uterine cavity.
- Pelvic T.B.
- Endometriosis.
- Allergy to Copper (for Cu T type only).
- Anomalies distorting the uterine cavity.
- Anemia.
- Unexplained vaginal bleeding.

INTRAUTERINE DEVICES COMPLICATIONS / SIDE - EFFECTS

Bleeding and pain

Expulsion

Perforation

Pelvic Inflammatory Disease (PID)

Pregnancy: Topic Intrauterine.
 Ectopic

Missing string.

INTRAUTERINE DEVICES EFFECTIVENESS

Pregnancy rates : 1 to 3 / 100 women / year
Newer Copper IUDs: < 1 / 100 women / year
(Tcu 380A Tcu 380Ag, Tcu 820C, MLCu 375)

One of the most effective reversible methods.

IUD AND PREGNANCY MANAGEMENT

1st trimester pregnancy, string visible: Remove IUD

1st trimester pregnancy, string not visible: do not manipulate

2nd trimester pregnancy: do not attempt to remove IUD

MANAGEMENT OF SIDE EFFECTS BLEEDING

Irregular : Pelvic exam: if normal, reassure patient.

Heavy bleeding : Pelvic exam: if normal, reassure patient.

Iron tablets, Ibuprofen 800 mg tid for 7 days

Pelvic exam: uterus enlarged or ovarian mass,
explain the problem to client. Might need
surgery or another method of contraception.
Refer to physician.

MANAGEMENT OF SIDE EFFECTS CRAMPING, PELVIC INFECTION

Perform pelvic examination: Remove IUD if cramping is severe.
Remove IUD if patient has PID

Treat accordingly

Choose another method.

INTRAUTERINE DEVICES MANAGEMENT OF A MISSING STRING

1. Pelvic examination (rule out pregnancy)
2. Probe the cervical canal
3. Probe the uterine cavity
4. Ultrasound
5. X-ray methods:
 - a. Abdominal x-ray
 - b. Uterine sound procedure
 - c. Hysterosalpingogram

POSTPARTUM IUD INSERTION TIMING AND PREREQUISTES

Post placental	: Within 10 minutes after expulsion of placenta. Requires a properly trained provider.
Immediate postpartum	: Within 48 hours after delivery. Requires a properly trained provider.
Puerperal or delayed insertion	: One to six weeks postpartum. <u>IUD should not be inserted</u> , the uterus is soft and perforation is likely.
Post puerperal or interval insertion	: Anytime more than 6 weeks.

POSTPARTUM IUD INSERTION EXPULSION

Post placental and immediate postpartum expulsion rates are approximately twice those expected for interval insertions.

Expulsion rate for insertion at C-section is lower than those for vaginal deliveries after delivery of placenta.

Expulsion rate: 7 to 15 per 100 users at 6 months.

POSTPARTUM IUD INSERTION GUIDELINES

IUD can be inserted safely after a 1st trimester abortion.

IUD can be inserted safely after a 2nd trimester abortion only by a properly trained provider.

POSTPARTUM IUD INSERTION CONTRAINDICATION

Severe anemia

Premature rupture of membranes > 12 hrs.

Chorioamnionitis

History of postpartum hemorrhage



LONG-ACTING HORMONAL CONTRACEPTIVES

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LONG-ACTING HORMONAL CONTRACEPTIVES

Progestins: Synthetic hormones that act as the natural female hormone Progesterone

LONG-ACTING HORMONAL CONTRACEPTIVES PRESENTATION FORMS

First Generation Systems:
Injectable contraceptives

Second Generation Systems:
Progesterone-releasing IUDs
Subcutaneous implants
Silastic vaginal rings

LONG-ACTING HORMONAL CONTRACEPTIVES TYPES

DMPA (Depo Provera)
Depot Medroxyprogesterone Acetate

Norethindrone Enanthate

LEVONOREGESTREL

LONG-ACTING HORMONAL CONTRACEPTIVES

DMPA (DEPO_PROVERA)

Trimonthly injection

Depot Medroxyprogesterone 150 mg in micro crystalline
suspension most readily available in Jordan

NET-EN

Bimonthly injection

Norethindrone Enanthate 200 mg in oil

Monthly injection (WHO)

Monthly Injectables

Cyclofem: 25 mg DMPA, 5 mg estradiol cypionate

Mesigyna: 50 mg NET-EN, 5 mg estradiol valerate

Others.

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES

DEPO-PROVERA (DMPA)

- WHO STUDIES :**
1. No increased risk of breast cancer with the use of DMPA.
Effects of DMPA in beagles (dogs) are not predictive of its effects in humans.
 2. Prolonged use of DMPA does not enhance the risk of cervical cancer.
CONTRACEPTION 45:299-312, 1992

- Oct. 29, 1992 : The United States FDA approved Depo-Provera for use as a contraceptive in the U.S.
- Sept. 20, 1994 : The Technical Committee for Drugs Control has approved the use of Depo-Provera in Jordan.

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - EFFECTIVENESS

DMPA 150 mg every 3 months: < 1/100 women/year

NET-EN 200 mg every 2 months: 0-0.7/100 women/year

Monthly: 100% effective or < 1/100 women/year

LONG-ACTING HORMONAL CONTRACEPTIVES

DMPA Should not be used

Pregnancy

Unexplained vaginal bleeding

Rule out Pregnancy

- No signs or symptoms of pregnancy, and
- No intercourse since last normal menses, or
- Using other reliable method, or
- Within seven days of normal menses, or
- Four weeks postpartum (non-lactating), or
- Within seven days postabortion, or
- 6 months, amenorrheic and breastfeeding, or
- Physical exam or laboratory test.

DMPA Usually Not Used

Current stroke

Ischemic heart disease

Severe diabetes with vascular disease

Breast cancer

Active hepatitis

Liver tumor

Trophoblastic tumor

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - ADVANTAGES

Reversible with delay

Highly effective

Long-lasting or long-lived

Decrease menstrual flow

Does not effect lactation

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - MECHANISMS OF ACTION

Inhibition of ovulation at the hypothalamic level

Cervical mucus viscous and scanty

Endometrial suppression

Alteration in tubal motility

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - DISADVANTAGES

Cessation of treatment

Treatment cannot be discontinued once the injection has been given.

Administration

Injectables are unacceptable for some people.

Menstrual disturbance

Irregular bleeding is the rule.

Weight gain: DMPA: 0,5 – 2 kg in first year

NET-EN: No effect known

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - DISADVANTAGES

Delayed return to fertility

DMPA: Pregnancy is unlikely for 4-8 months.

NET-EN: Quicker rate of return of ovulation.

Adverse effects on the fetus

DMPA: Extremely rare. Reported transient clitoris enlargement.

NET-EN: Masculinization of the female fetus.

Choasma

lait

progestogenic side effect.

Depression

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - MANAGEMENT OF SIDE EFFECTS

Menstrual Disturbances

Reassurance, Ibuprofen (up to 800 mg tid for 5 days).

Cycle of COC

Depression and decreased libido: suggest change to another method

LONG-ACTING HORMONAL CONTRACEPTIVES INJECTABLES - DIRECTIONS FOR USERS

May be given anytime if client is not pregnant.

Preferably given during the first seven days of Cycle.

May be given immediately postpartum for non-breastfeeding mothers.

May be used for breastfeeding mothers not relying on LAM, six weeks postpartum.

LONG-ACTING HORMONAL CONTRACEPTIVES IMPLANTS - GENERALIZATIONS

Norplant

Active substance: Levonorgestrel.

Each capsule contains 36 mg of active substance.

Effective after 24 hours.

Duration: 5 years.

The United States FDA approved Norplant for use as a contraceptive in December 10, 1990.

The Technical Committee for Drugs Control has approved the use of Norplant as a contraceptive in Jordan in January 25, 1996.

LONG-ACTING HORMONAL CONTRACEPTIVES

During the first 7 days after onset of menstruation.

Immediately postabortion.

Immediately postpartum in non-breastfeeding women.

After 6 weeks postpartum in lactating women.

LONG-ACTING HORMONAL CONTRACEPTIVES

General Information:	How it works
	Length of protection
	Reversibility
	Possible side effects
General Information:	Insertion and removal
	Advantages & disadvantages
	Immediate postinsertion care

LONG-ACTING HORMONAL CONTRACEPTIVES

Action in hypothalamus and pituitary suppressing the LH surge responsible for ovulation

Progesterone levels consistent with ovulation occur in only about half the cycles

Signs of suppression in endometrium

LONG-ACTING HORMONAL CONTRACEPTIVES

Seek continuous contraception

Want long-term birth-spacing

Have the number of children they want, but do not want to be sterilized at the time

Want to be sterilized but do not meet criteria

Have side effects from combined oral contraceptives.



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EMERGENCY CONTRACEPTION

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EMERGENCY CONTRACEPTION CANDIDATES AND DEMOGRAPHIC PERSPECTIVE

Unprotected sexual intercourse within 72 hours of seeking medical care

Most women are under 25 years

Have been sexually active for at least two years

Most women have never been pregnant

Have used some form of contraception in the past

Do not use any method at present

EMERGENCY CONTRACEPTION YUZPE METHOD

Two tablets each containing Ethinyl Estradiol 0.05 mg and DL-Norgestrel 0.5 mg (Ovral), are ingested 12 hours apart for a total of 4 tablets

Prescriptive Equivalents for the Yuape Method of Emergency Contraception*

Trade Name	Formulation	Number of Pills Taken With Each Dose
Ovral	0.05 mg of ethinyl estradiol 0.50 mg of norgestrel	2
Lo-Ovral	0.03 mg of ethinyl estradiol 0.30 mg of norgestrel	4
Nordette	0.03 mg of ethinyl estradiol 0.15 mg of levonorgestrel	4
Levlen	0.03 mg of ethinyl estradiol 0.15 mg of levonorgestrel	4
Triphasil	(Yellow pills only) 0.03 mg of ethinyl estradiol 0.125 mg of levonorgestrel	4
Trilevlen	(Yellow pills only) 0.03 mg of ethinyl estradiol 0.125 mg of levonorgestrel	4
Microgynon		4
Lofemenal		4

* Treatment consists of two doses taken 12 hours apart. Use of an antiemetic agent before taking the medication will lessen the risk of nausea, a common side effect.

EMERGENCY CONTRACEPTION SIDE EFFECTS

Nausea in **30-66%** of patients

Emesis in **12-22%** of patients

Antiemetic agent to be taken one hour before each dose

EMERGENCY CONTRACEPTION EFFECT ON MENSTRUAL CYCLE

98% of patients will menstruate by 21 days

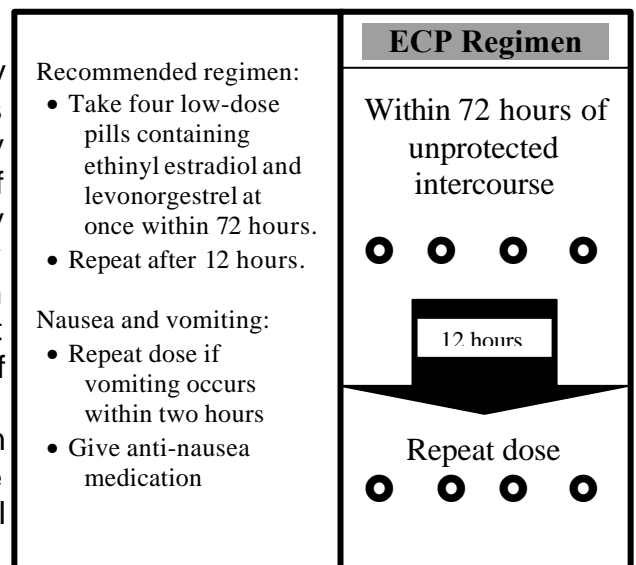
Over **90%** of patients will have normal menses

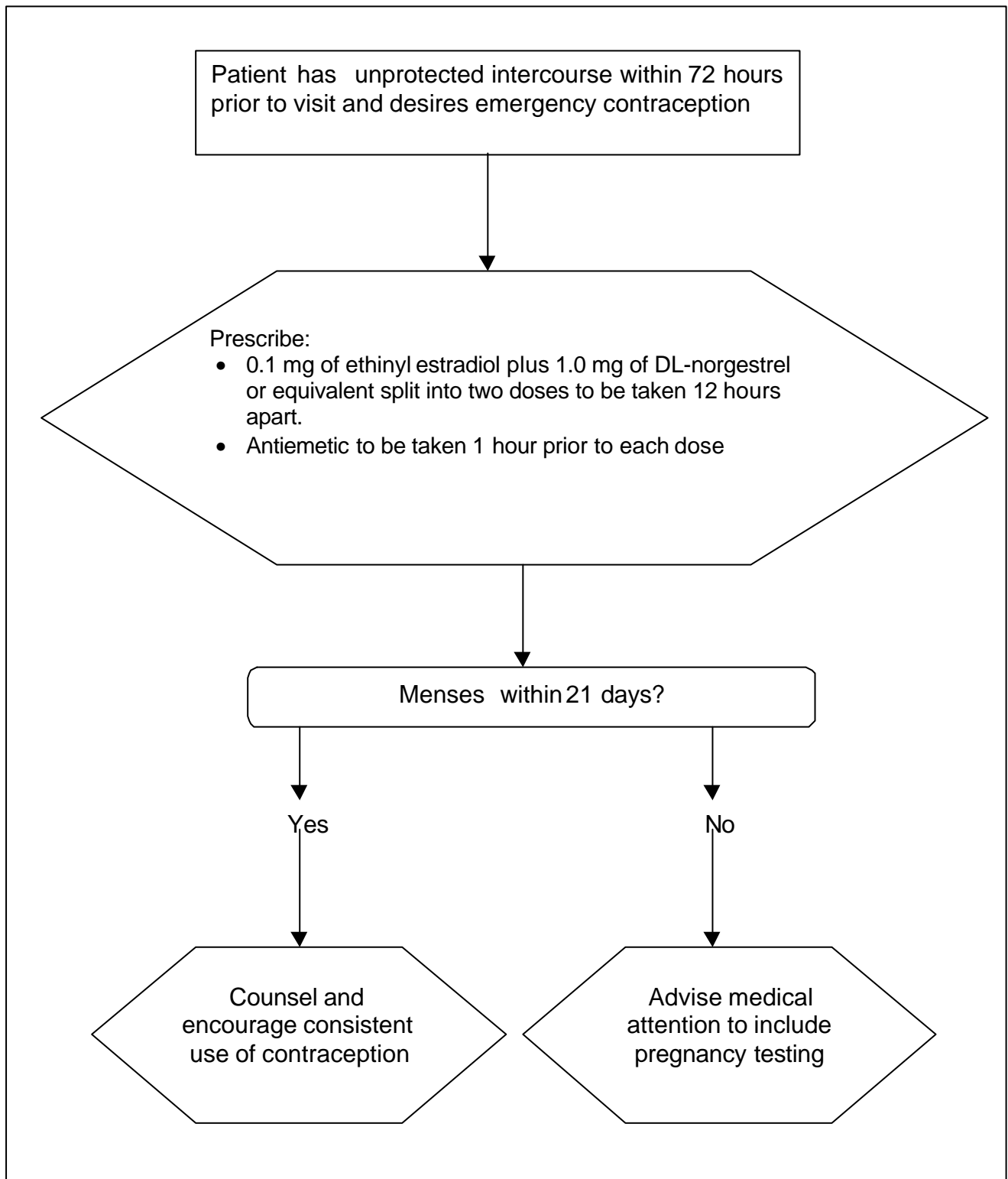
EMERGENCY CONTRACEPTION GENERAL CONSIDERATIONS

Efficacy	:	75%
Teratology	:	Insufficient data
Method of Action	:	On endometrium (failure of nidation)
Contraindication	:	None
Counseling	:	Contraceptive methods available

Emergency Contraception Using COCs

COCs can also be used to prevent pregnancy after unprotected sex. When used in this manner, COCs are called emergency contraceptive pills (ECPs). ECPs provide a brief large hormone exposure that causes temporary changes in the ovaries, fallopian tubes and/or endometrium. The regimen will not disrupt an existing pregnancy and regimen failure will not harm fetus. The regimen reduces 75 percent of pregnancies that would have occurred. There are no known complications. The regimen can be used as often as needed but should not be used on a regular basis instead of conventional methods.





Algorithm for patient management for emergency contraception